

AUGUST, 1928
MONTHLY

No. 271

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

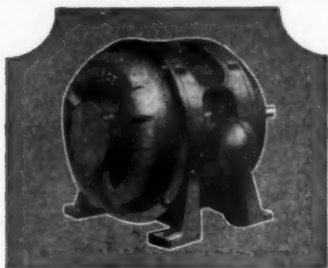
*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

AND ALL OTHER
MACHINE TOOL
USERS

Controlled Circulation
25,000 Monthly

Published By

HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO



Another... money-saving motor

THIS new Reliance Across-the-Line Motor can be thrown directly on the line with the simplest type of manually-operated switch or push-button starter. It's a real money saver because the starting equipment is simpler, affords greater convenience, requires fewer replacements and much less attention.

Sizes $7\frac{1}{2}$ —30 horsepower, for 2 and 3 phase circuits. Investigate before you buy motors within this size range.

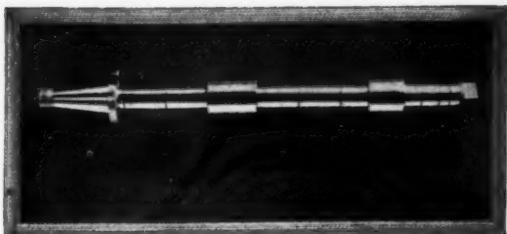
Cost with push-button control is no more than for ordinary motor with compensator.

Bulletin 1093 gives details

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Pittsburgh; Cincinnati; St. Louis;
Detroit; Buffalo; Philadelphia; Chicago; Birmingham

RELIANCE ^{AC} MOTORS
with Ball ^{DC} Bearings



a K & T Arbor on your Milling Machine will make a Better Machine Tool of it

THE same extreme refinement, sturdiness and accuracy that established Kearney & Trecker Milling Machines as a standard of comparison is maintained in the new standard K & T Arbors.

You will appreciate this after testing a K & T Arbor in your own way—under heavy cuts or fine high speed work—and then putting your gauges to the work.

When the mechanical efficiency of your Milling Machine depends so much on the quality of the Arbor used, it is well worth remembering that

*A K & T Arbor on your Milling Machine
will make a Better Machine Tool of it.*

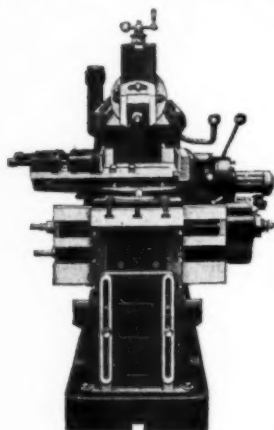
Remember too, a K & T Arbor will fit any milling machine of 2 to 25 horsepower having the New Standardized Spindle End.

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER

MAIN OFFICE AND WORKS: MILWAUKEE, WISCONSIN

(See page 137 for K & T Re-builds)

New "American" Auto-Oiled Shaper



12 Points of Superiority

- Tremendous Cutting Power
- Unparalleled Rigidity
- Permanent Accuracy
- Automatic Forced Lubrication
- Multiple Splined Shafts
- Timken Roller Bearings
- Multiple Disc Clutch and Brake
- Helical Gears—Alloy Steel
(Hardened)
- "V"-Type Ram
- Improved Table Support
- Tu-Piece Bull Wheel
- Centralized Control

Meets Today's Demands

Industry is speeding up all along the line—higher cutting speed—greater perfection of automatic machinery—stabilizing of production—simplification—etc. "American" designs have kept abreast of this tempo. The New American "Auto-Oiled" Shaper has every convenience to speed up the natural working pace of the operator. Modern in every particular, it will perform all classes of its work at the highest speeds and coarsest feeds practicable, producing at the same time a finished product of dependable accuracy. Forward-looking design and positive, foolproof lubrication insure a long accurate operating life with the minimum of depreciation.

Write for illustrated booklet and see how Shaper design has been revolutionized in the New American "Auto-Oiled" Shaper.

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

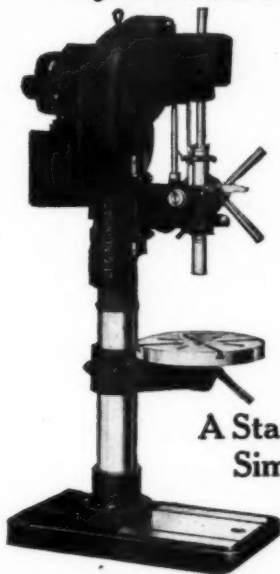
LATHES

RADIALS

SHAPERS

A New Drilling Machine

By Cincinnati Bickford



**The DIRECT
DRIVE
*Upright***

**A Standard Machine
Simplified To Suit
Your Work**

Buy Only the Features You Need

If your work requires speed and feed changes, they are provided. But for high production on one specific job, this machine is stripped of all general purpose complications, which are often paid for and never used.

May We Send Descriptive Literature ?

The Cincinnati Bickford Tool Co.
Oakdale, Cincinnati, Ohio

Locates Gear Trouble Definitely



Lees-Bradner Gear Tester

In order to correct gear troubles you must know exactly what is wrong with the gears—it is not enough to know that they roll roughly or that they make an objectionable noise.

The characteristic feature of the Lees-Bradner Gear Tester as distinguished from other devices is that it tells exactly what is wrong with a gear, thus distinguishing immediately between an error in tooth form and an error in indexing.

As it measures errors so exactly, you can set a definite limit on gear errors as easily as on the diameter of a shaft. It will soon save its cost for any maker or user of spur gears.

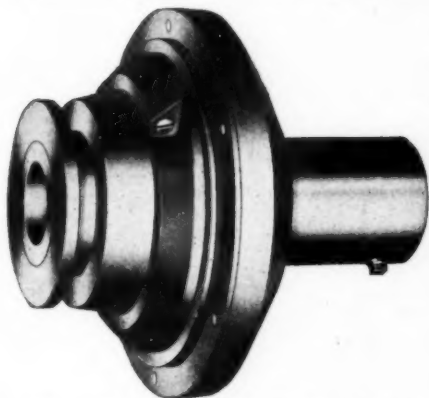
Price: \$375. f. o. b. Cleveland

Tooling Extra

The Lees-Bradner Co.
Cleveland, Ohio

The CONWAY CLUTCH

Takes the Lead Again!



The Conway Disc Clutch

Has all the good features of any clutch built with many added points of superiority, and again takes the lead in safety, efficiency, dependability and power capacity. The CONWAY continues to be the superior agency for starting, stopping and transmitting power.

Enclosure, safety, balance, centripetal action, simplicity of design and sturdiness of construction are the outstanding features of the Conway Clutch. It is engaged with slight pressure, releases instantly, and is the easiest disassembled unit made.

We will gladly mail you a copy of our latest bulletin, which pictures and describes this improved clutch in detail.

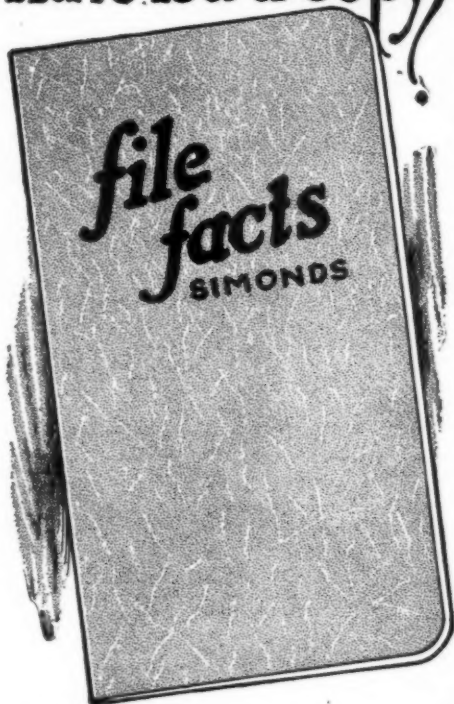
Ask for Bulletin D. C.

The Conway Clutch Co.

West 6th Street

Cincinnati, Ohio

Have You a Copy?



It is full of useful information on the care and use of Files. Fits your vest pocket. Write SIMONDS for free copy.



IN the Machine Shop, the File is an indispensable tool. Mechanics who once learn the art of proper filing never forget it. Quality in hardness and cutting teeth of a file—such quality as Simonds puts in—

Simonds Files

—is most appreciated by the mechanics who best know the art of filing.

If you want a real high grade file, specify "Simonds" on your next order.

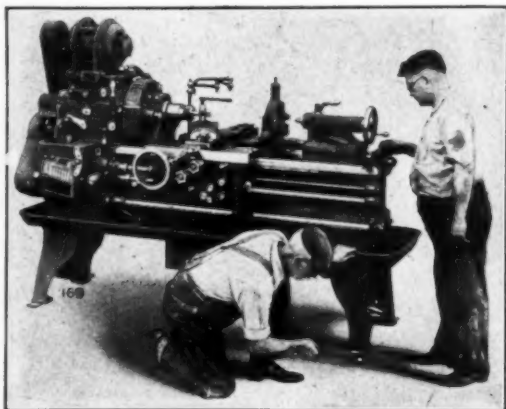
Simonds Saw and Steel Co.

Established, 1832

FITCHBURG, MASS.

Adv. Dept. 4

When Cincinnati Lathes



are accurately leveled on the floor as shown in cut they are guaranteed to bore and turn your work as true as any. A limit variation of .001 is allowed, but never reached. None leave our factory that show greater error in any alignment.

Sizes 16" to 32", either Cone type or Geared Head for belt or motor drive. Specify Cincinnati Lathes and be sure of the work you produce.

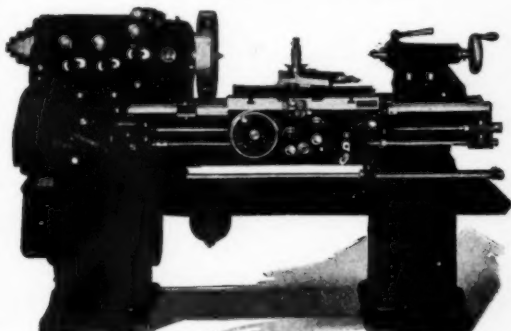
Specialists Over 20 Years

The Cincinnati Lathe & Tool Co.

Oakley, Cincinnati, Ohio

The Monarch Ball Bearing Helical Geared Head Lathe

Silent—Smooth—Powerful



Three and one-half teeth of the oil-hardened helical gears are always in mesh.

There is a noiseless, smooth, constant transmission of power, with higher spindle speeds than are possible through any system of spur gearing.

The result is greater production.

Write for complete description of Monarch Helical Geared Head Lathes from 14 to 30 in., with 5 ft. to 30 ft. beds. The folder describes many other modern features, including unusual ease of operation.

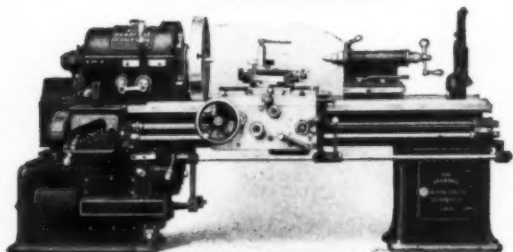
The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

Cut Your Costs

By Using

**Bradford Patented Original Low Drive
All Geared Lathes**



Greater production—Low upkeep—Continuous duty—no tie up for repairs—more than 1200 now in use and no repairs. Guaranteed to finish turn work as smooth as cone type Lathes. Sizes 14" to 48" inclusive. Also Cone Type 14" to 48" inclusive.



Bradford Unit Type Drilling and Tapping Head

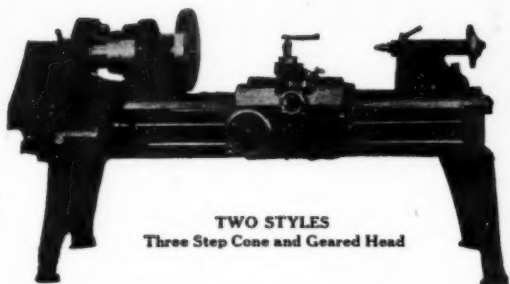
A self contained motor driven unit designed for one or more heads to be built into one unit at any angle from horizontal to vertical position.

The Bradford Machine Tool Co.

Precision Lathe Builders Since 1840

Cincinnati, Ohio

AGENTS WANTED



TWO STYLES
Three Step Cone and Geared Head

16"x6' New Design \$525.00
Weight 1900 lbs.

18"x8' New Design \$585.00
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the **INEXPENSIVE** class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

Made in 16" and 18" swing from 6' to 18' length of bed. Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

*Write us for full information and **PRICES***

The Rahn - Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO

Is Obsolete Machinery On Your Pay-Roll?

If there are one or more machines in your plant which cannot compete profitably with more modern equipment, they have become obsolete, and the sooner you replace them the better.

Obsolescence is not a matter of age or condition, but of comparative production costs. Many a machine in excellent condition is losing money for its owner every day—it's on his pay-roll.

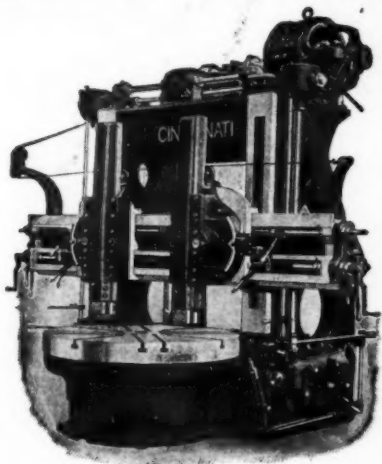
It is far cheaper to pay the price of modern productive machinery that will earn a profit on the investment than it is to continue daily losses on obsolete equipment.

In the automotive and other highly competitive lines this lesson has been learned most thoroughly. They have reduced production costs enormously, and haven't stopped yet. Other manufacturers will benefit greatly by following their example.

Keep one eye on your obsolete equipment, and keep your other eye on the best the market affords for the purpose of replacement—and don't let your competitors beat you to it.

CINCINNATI 48", 60", 72", 84"

Rapid Traverse Boring Mill



Among its salient features are—Heavily reinforced table, driven by bevel gear and pinion; rapid power traverse in all directions; centralized control, with all fine adjustments, rapid traverse, hand operating handle, feed change, feed reverse, speed change, table control and brake levers, all within immediate reach of operator; box type housing; steel gears in feed and speed boxes; tumbler type gear changes, etc., etc.

Write for Bulletin of Cincinnati Rapid Traverse Boring Mills, containing specifications and complete description, from which the practical mechanic will readily understand why the "Cincinnati" is selected for RAPID PRODUCTION.

The Cincinnati Planer Co.

Cincinnati, Ohio, U. S. A.

Setting the Pace

THE CLEVELAND OPEN SIDE PLANER sets the pace in those shops eager to eliminate waste and speed up production. It contains fewer parts than any other openside planer made. Saves extra steps as all levers are reached from one position. The operating simplicity of the CLEVELAND makes it a better producer for any shop.

The Cleveland Planer Company

Established 1900

3148 Superior Ave.,

Cleveland, Ohio

Send
for
Folder

Over
1100

Installations

26"
to
72"

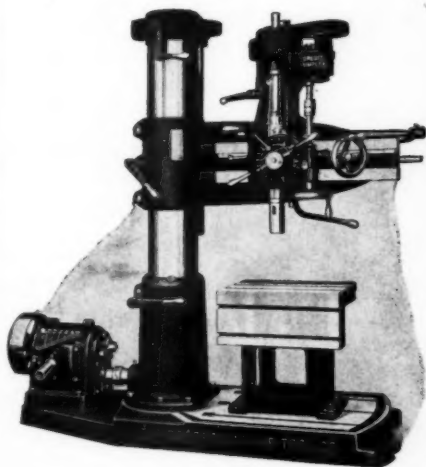


The Open Side Planer with the Column Base Cast Integral with Its Closed Top Bed.

2½ Ft. - \$1375.

3 Ft. - \$1457.

Dreses Simplex Radials



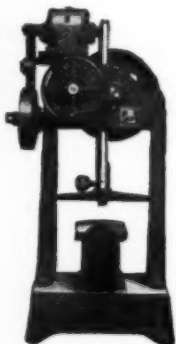
**We also build a complete line
of Multi Duty Ball Bearing
Radial Drills.**

The Dresse Machine Tool Co.
CINCINNATI, OHIO

KEEN COMPETITION DEMANDS EFFICIENT MACHINE TOOLS

**Replace the sledge hammer
for drive fit work.**

**It cannot compete with the
Lucas Power Forcing Press**



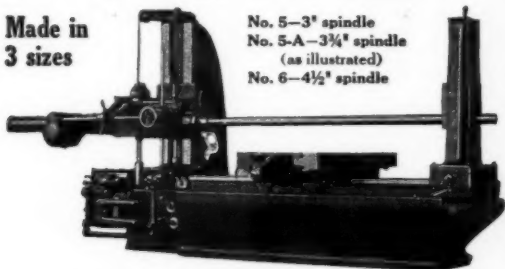
**The BELT
does the work
and SAVES the
workman's TIME
and ENERGY
for better use.**

We also make the
**LUCAS "PRECISION"
Horizontal Boring, Drilling
and Milling Machine**

**The Lucas Machine Tool Co.
521 East 99th Street, Cleveland, Ohio**

Defiance No. 5-A Horizontal Boring, Milling, Drilling and Tapping Machine

Made in
3 sizes



No. 5—3" spindle
No. 5-A—3¼" spindle
(as illustrated)
No. 6—4½" spindle

For More and Better Work

Defiance Machines are made to meet every requirement of machine tool users. They have an abundance of power and an ease of manipulation which insures speedy and accurate production in both single and manufacturing operations.

Speed, power and precision are obtained by simplified design and unusual accessibility which are but two of the many special features which add much to their dependability under continued hard usage and their ability to do more and better work.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery



*It Pays to
Specialize*

**SPEED
12,000
R. P. M.**

**No Vibration
No Heating**

*Ask for full
Information*

**Our
No. 1/2**

Avey

**BALL BEARING
DRILLING MACHINE**

is specially designed for very
light drilling where speed is
the essential rather than power.

**Eliminates Twist Drill
Breakage**

because the drill cuts so fast
that feed pressure does not
break it.

**The Avey Drilling Machine Co.
CINCINNATI, OHIO**

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

Designed for High Speed Work

Ready for the Job

C-O
14-inch
High-Speed
Sliding
Head
Sensitive
Drill

3,400
to
10,000
R. P. M.

More
Holes
per
Hour!



Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, 5/8".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck
to base table, 10¾".
Size of base table, 9½" x 12½".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼"-3" x 1¼" face.
Bench space, 15" x 20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, $1\frac{1}{2}$ " endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois
New York Branch 407 Broome St. Complete stock carried at branches San Francisco Branch 955 Folsom St.



NATCO DRILL HEADS

Drill heads can often be used on single spindle drillers and tappers to increase production where the purchase of multiple or special equipment is inadvisable. Natco heads are built in two types, fixed center and adjustable spindle.

We are Manufacturers of

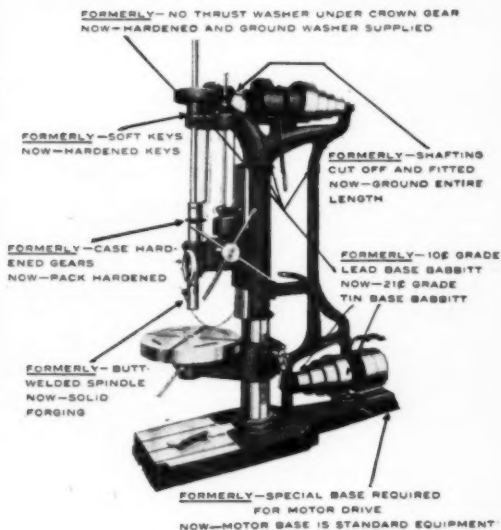
**Standard Adj. Multiple.
Fixed Center Multiple
Single Purpose Auto.
Hi-Duty Single Spindle
Horizontal Duplex**

**Drill Heads
Universal Joints
Quick Change Holders
Rotary Tables
Fixtures
Drillers-Tappers**

The National Automatic Tool Co.

Richmond, Indiana

Better Aurora Drilling Machines Are Ready To Serve You



Four production shops have already purchased 117 Better Auroras. They'll satisfy your requirements also. Just make one purchase and settle all arguments.

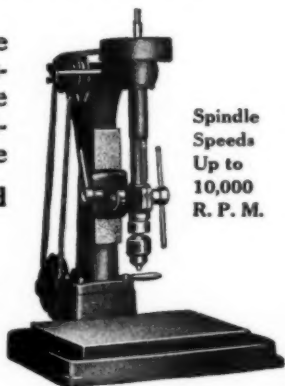
The Aurora Tool Works
3317 Colerain Avenue, Cincinnati, Ohio, U. S. A.
DIVISION OF THE OESTERLEIN MACHINE CO.

Don't Forget—

**Wood, Fibre, Rubber,
Paper, Mica, Bakelite**

as well as the
ordinary met-
als can be
drilled to ad-
vantage on the

**Leland-Gifford
Super-
High-Speed
Ball Bearing
Drilling
Machine**



**Spindle
Speeds
Up to
10,000
R. P. M.**

**Write us about this Drill to speed
up your drilling operations.**

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

**BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER**

AGENTS

Hendrie & Bakhoff	Denver
F. E. Satterlee Company	Minneapolis
Colcord-Wright Mch. & Supply Co.	St. Louis
Herberts Machinery & Supply Co.	Los Angeles
F. F. Barber Machinery Co.	San Francisco
	Toronto

LELAND - GIFFORD

**Taylor & Fenn Belt Driven
No. 12 Spring Press**



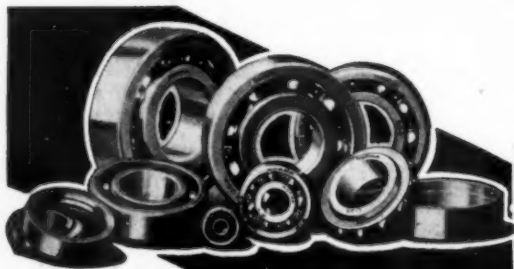
**UNIFORM BLOW
SPRING PRESSES**

**Are made in
three sizes,
with either
single or
double action**

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

**The Taylor & Fenn Co.
Hartford, Conn., U. S. A.**



NORMA-HOFFMANN

PRECISION Ball and Roller Bearings,
built to meet the exacting require-
ments of those with whom depend-
able bearing performance is the one
conclusive measure of bearing value.

Catalogs 904, 905, and 917

Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.

PRECISION BEARINGS

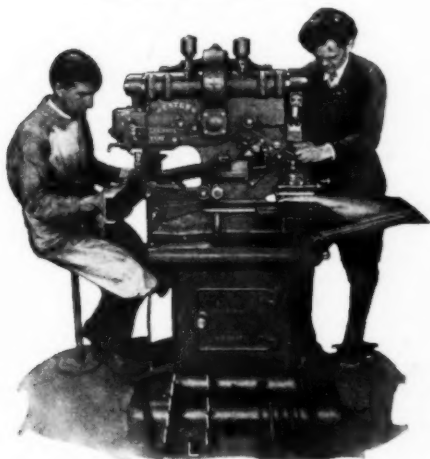


JUST WHAT YOU HAVE BEEN LOOKING FOR

A direct connected motor driven

METALWORKER

**built with the same careful precision
as a high grade machine tool**



PATENT APPLIED FOR

Will cut, in soft steel, Flats $\frac{1}{8}$ "x3", Rounds up to $\frac{3}{4}$ "; Squares up to $\frac{3}{8}$ "; Angles, 90°, $\frac{1}{4}$ "x2", T Iron, 90°, $\frac{1}{4}$ "x2"; Miter Cut Angles, 45°, $\frac{3}{16}$ "x2"; Shear plates up to $\frac{1}{4}$ "; Notch angles $\frac{1}{4}$ "x2", Punch $\frac{3}{16}$ " hole in $\frac{1}{4}$ " metal, or equivalent. Frame highest grade Plate Steel with Cast Iron parts cast integral with frame. Equipped with $\frac{3}{4}$ H. P. Motor direct connected, through worm gear reduction unit, to working parts. All working parts enclosed and self lubricated. Clutch operated either by hand or foot and may be operated continuously or intermittently as desired. Guards, adjustable strippers, and length gauges regular equipment.

AGENTS WANTED IN OPEN TERRITORIES

SHAW-PALMER-BAKEWELL CO.

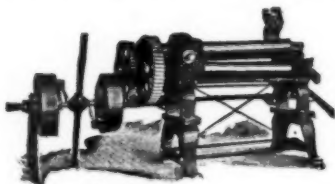
LOS ANGELES, CALIFORNIA

409-11 East 3rd Street

Faber 4621

BELOIT

Sheet & Plate Bending Rolls



Initial Type

BELOIT Bending Rolls are built to fill the demand for strong, efficient and quick acting rolls for forming sheets and plates into cylindrical shapes. Adapted to the requirements of sheet metal and light plate working plants, the modern design of this type makes it possible for the operator to curve plates completely to the edge, thus getting away from the undesirable flat near the edge of the sheet.

STRONG, compact, easy to operate, conservatively rated and amply back geared to require the minimum of power. Indispensable in any plant having a metal working department. Made in Initial Type, as shown above, or in Pyramid Type.

*Write for Complete Information
and Low Prices*

Hendley & Whittemore Co.

100 S. State St., BELOIT, WIS.

PUNCHES—SHEARS—BENDING ROLLS



Grand Rapids Combination Twist Drill & Tap Grinders

**Drills and Taps Sharpened
on a Grand Rapids Grinder**

**Cut Faster — Stay Sharp Longer
Produce More and Better Work**

BULLETIN ON REQUEST

Gallmeyer & Livingston Co.

342 Straight Ave. S. W., Grand Rapids, Mich.

VARIETY

"—the jobs we do on this attachment are of very many different kinds."



Thus one of our customers backs us up on our claim that the CISCO Universal Oil Grooving Attachment is adaptable to a great VARIETY of work.

The attachment is built for any make of engine lathe from 14" to 24". It cuts a VARIETY of figure eight oil grooves, and is built in three sizes of 6", 9", and 12" maximum lengths of stroke.

The VARIETIES of diameters taken by this attachment is limited only to the swing of the lathe on which the attachment is used. The depth is also controlled by the operator.

If you will send us samples of your different jobs, we will groove them, and show you how this attachment is adaptable to your VARIETY of work.

The Cisco Machine Tool Co.
1700 Elmore Street, Cincinnati, Ohio

Hammond

Cabinet Base, Motor Driven
Polishing and Buffing Machine



Diameter of spindle between housings.....	23 $\frac{7}{8}$ "
Diameter of spindles in bearings	1 $\frac{1}{8}$ "
Diameter of spindle between flanges	1 $\frac{1}{4}$ "
Length of spindle, each	35"
Length of spindle over all	80"
Distance from face of flange to end housing ..	9"
Diameter of spindle pulley.....	6"
Width of belt.....	3 $\frac{1}{2}$ "
Distance floor to center of spindle.....	38"
Floor space.....	28"x80"
Shipping weight.....	1600 lbs.

The Hammond Manufacturing Co.

7808 Kinsman Road,

Cleveland, Ohio

Lewis Seam-Welding Head

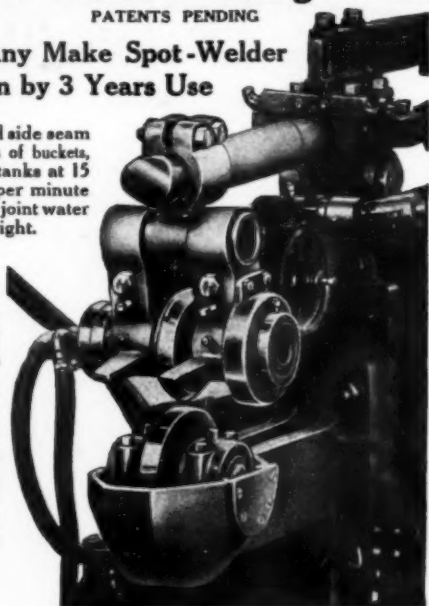
PATENTS PENDING

**Fits Any Make Spot-Welder
Proven by 3 Years Use**

Will weld side seam or bottoms of buckets, pails or tanks at 15 to 25 ft. per minute and make joint water and gas tight.

One user has made over 1½ million 3 inch lap joints and then nickel plated the piece.

You can't find the joint.



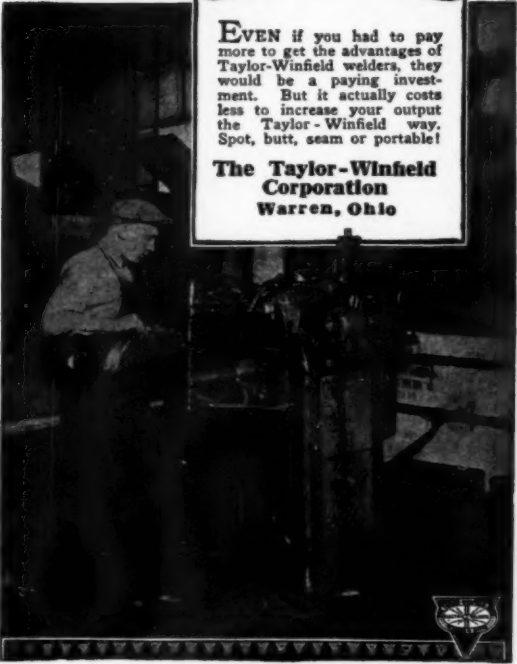
No structural change is necessary to your spot welder—simply clamp the Lewis Welding Head to the upper horn. Remove lower horn and bolt on the proper electrode for either transverse or longitudinal welding. Please note the electrode "drive" is a separate unit and NOT attached to spot welder.

Let us send you our bulletin No. 128 which gives interesting information on seam welding in general and *This Proven Seam Welder in Particular.*

Welding Appliance Co.

2111 West Lake St., Chicago, Ill., U.S.A.

TAYLOR-WINFIELD WELDERS



EVEN if you had to pay more to get the advantages of Taylor-Winfield welders, they would be a paying investment. But it actually costs less to increase your output the Taylor - Winfield way. Spot, butt, seam or portable!

**The Taylor-Winfield
Corporation
Warren, Ohio**





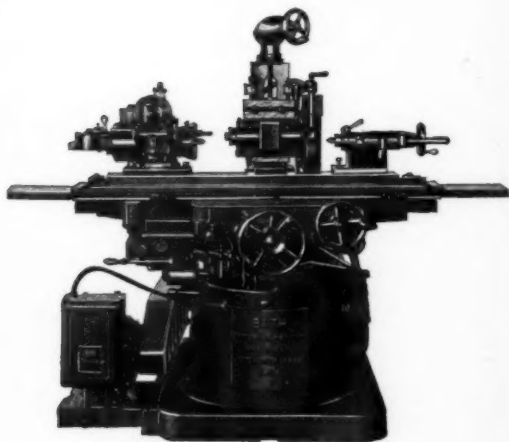
**Finish Your
Flat Work
on a
Peerless
Surfacing
Machine**

***Ball
Bearings
Throughout***

**PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.**

BATH Universal Grinders

SELF CONTAINED



10"x25"

12"x36"

also

**Plain Cylindrical, Valve Seat
and Tappet Grinders**

Fitchburg Grinding Machine Corp.

Fitchburg, Mass., U. S. A.



7" Horizontal Shaper 3½" Vertical Slotter

Combined in One Machine

A
High
Grade
Tool



Ideal
for
Light
Work

The Rhodes Combined Shaper and Slotter

Is furnished in combination or separate—separate in both floor and bench type, and in combination in the floor type only.

It is high grade in every sense, with all the essentials of larger machines, and because of its light running and easy handling it is more efficient and economical on work within its capacity.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company
944 Park Road, ↔ Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

*Send for details of the
Marvel No. 8—ask us
to tell you who uses it!*

*Get catalog of other
Marvel equipment and
our new high-speed-edge
hack saw blade.*

The Marvel Metal Band Saw No. 8



Investigate and Know—

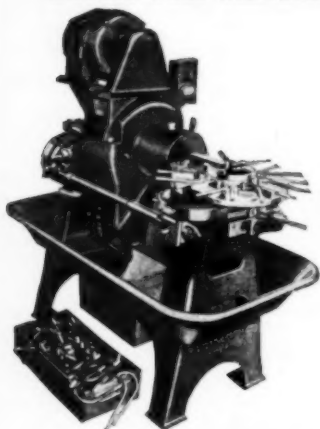
why many well known plants are so completely satisfied with results obtained on the Marvel Metal Band Saw No. 8.

Among other advantages it offers ball bearing band wheels, ball bearing blade guide rollers, ball bearing blade frame carriage, big roomy bed or work table, three cutting speeds, a pump for projecting cutting compound—increasing blade life—a cut stop that can be set at any point desired, NEW adjustable blade pressure that indicates the feed pressure on the blade in POUNDS, and the ability to cut at any angle to 45°. Capacity up to and including 18".

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave., CHICAGO, ILL.

Why Not—

Double Your Threading Production ?



*Rickert-
Shafer
Automatic
Single-
Purpose
Threading
Machine*

This Economy Machine—

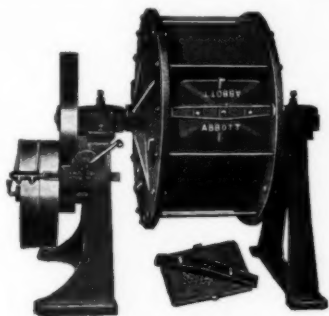
will in most cases cut your production costs 50% by increasing threading efficiency 100%. In the A-C Spark Plug plant, for example, the production has been raised to 22 threaded shells per minute with a Rickert-Shafer Automatic. Such results come only from using a machine especially adapted to threading operations.

Then, too, the Rickert-Shafer is practically the only automatic that maintains the high degree of **accuracy** demanded for many threading operations.

Its *range of work* is almost limitless. Made in sizes to fit your needs. Combination tools can be supplied for chamfering, reaming, facing, etc., along with threading.

Send us specifications of your needs

RICKERT-SHAFER CO., Erie, Penna.



NEEED for constant reduction in finishing has widened the field of ball burnishing unbelievably. Twenty years ago ABBOTT ball burnishing barrels were accepted as the ideal means of finishing small work such as buttons, buckles, etc. To-day improved ABBOTT barrels are producing results on stampings, spun and threaded work, castings and forgings—on safety pins and safety razors.

*Let us submit a burnishing analysis
on your work. Send samples.*

The Abbott Ball Company
1043 New Britain Ave., Hartford, Conn.

GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

Box type—rigid—all moving parts totally inclosed. No dangerous exposed gears or clutches in which operator could be injured. Entire mechanism operates in bath of oil—easy to keep machine clean.



Send samples or blue print. Our engineering department will be pleased to quote guaranteed production estimates and prices.

For lighter Tapping Equipment write for literature "LET AIR DO IT."

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.



THE
PERFECT METHOD
OF
TURNING NUTS



RETAINING
SCREW
ENGAGES
IN THE
GROOVE

The
FAVORITE
reversible ratchet
WRENCH

turns nuts without the lost motion of the old fashioned open end wrench.

It's A Time Saver

Construction is simple and strong for rough usage.

Open head type of head allows bolt to pass clear through it.

May we send you full particulars ?

Greene, Tweed & Co.

Sole Manufacturers

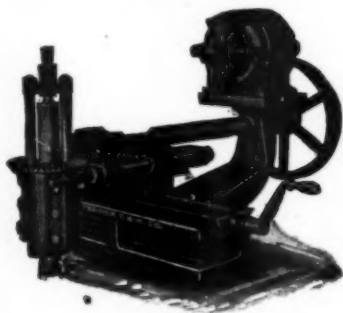
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New York



Without a Pedrick
Portable Milling Machine

**You Often Pay Its Price
In Delay On One Job**



To appreciate its value just add the savings you could effect in a year by taking this handy, ever-ready tool to the job instead of bringing the job to the tool, then subtract the price. Result—net earning power.

You need this Pedrick Miller to do those big jobs that your standard machines cannot handle.

Catalogue explains all its various operations—
a comprehensive book of reference and key
to manifold savings. Your copy is waiting—
shall we send it now?

Pedrick Tool & Machine Co.

Headquarters for Portable Machine Tools
Boring Bars, Crank Pin Turners, Pipe Benders, etc.

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Genesee Adjustable Hollow Mills Cut Costs as well as Steel

For it takes only *seven sizes* of Genesee Adjustable Hollow Mills to cover the entire range from $\frac{1}{8}$ " to 2", instead of the hundreds of solid tools necessary to accomplish the same result.

One set of blades will outlast from three to five solid tools of the same size. They are speedy—cutting up to 15" per minute in steel, and accurate—machining all sizes within their capacity to 1000th of an inch. They do not change their size, no matter how hard you may use them, nor will they clog with chips.

Genesees are ideal tools for finishing forgings and castings. Blades can be ground to any angle required, to point work or turn sharp tapers. Made in six styles from the heavy roughing Style "B" to the accurate finishing Style "F." Made in Style "N" for all Brown & Sharpe automatics, and in special styles and sizes to your order.

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Genesee Manufacturing Co., Inc.
141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools

Est. 1908



FOR 5 CENTS
A Hard
Tempered
Metal Cutting
Band Saw
Can Be
Salvaged

On Our Model A-2 Grinder
Why Throw Them Away When Once Used?

Many Plants have from 10 to 40 of our machines

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THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws.

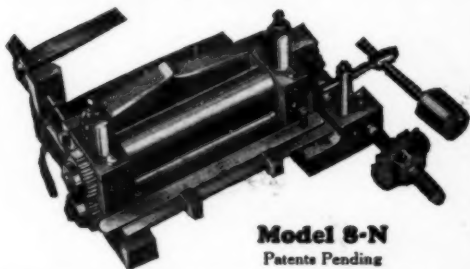
Manufacturers of the largest line of Saw Filers made in U. S. A.

108 Hamilton Ave.,

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Automatic Reversible
ROLL FEED
For Any Punch Press



Model S-N

Patents Pending

A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

PRICE \$195.00 F. O. B. Chicago

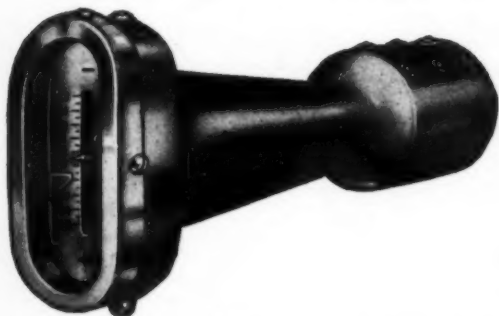
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DEPT. 3

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Accuracy and Speed
use the
CYLINDERMETER



**The New Super Production Indicator
Limit Plug Gauge**

*Tells The
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**Size-Taper-Roundness to $\frac{1}{4}$ -1000"
Simply Plug In and Read It**

**Self Aligning
Very Simple
Very Light**

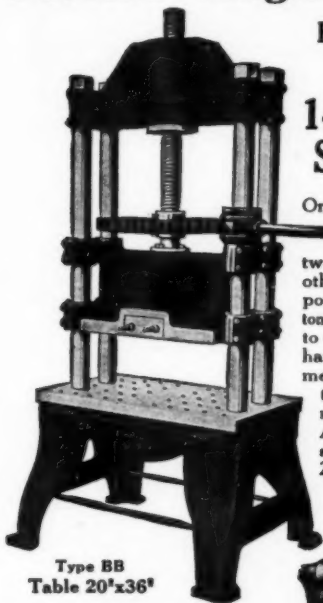
**Very Strong
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Very Accurate**

ALL SIZES FROM 1" UP

Production Gauge Co.

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Perfect Alignment Of



Type BB
Table 20"x36"

Punch and Die with the 1-Man 4-Post Screw Press

One man can do more, better and speedier work, than two men can do on any other type of press. Rigid, powerful — delivers 80 tons pressure — and simple to operate. Convenient handling — perfect alignment — eliminates any tendency to gouge or nick. Type BB is shown. Also made in three smaller sizes to give 20, 25 and 40 tons pressure.

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Surface Grinder

Has all latest adjustments and attachments. Both feeds have graduated dial. Vibration eliminated — Silent — Powerful — Accurate.

Details and Prices on request

**JARECKI MACHINE
AND TOOL CO.**

Department A
GRAND RAPIDS,

MICHIGAN



SHELDON MILLING MACHINE VISES



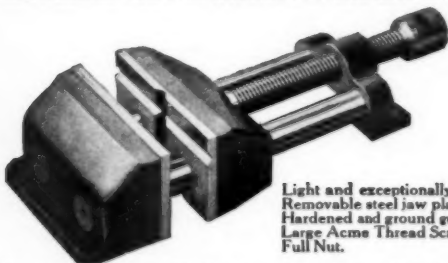
Plain or Swivel Base

The swivel vise is the plain vise with the addition of a circular base, graduated in degrees. It can be removed from the circular base and used as a plain vise if desired.

Specifications and Prices

No.	Width Jaws	Depth Jaws	Jaws Open	Plain Vise		Swivel Vise	
				Weight	Price	Weight	Price
3	3½"	1½"	2½"	15 lbs.	\$16.00	25 lbs.	\$20.00
4	4½"	1½"	3½"	30 lbs.	\$20.00	45 lbs.	\$24.00
6	6½"	2"	4½"	70 lbs.	\$30.00	90 lbs.	\$40.00
8	8½"	2½"	6½"	160 lbs.	\$45.00	225 lbs.	\$60.00

SHELDON DRILL PRESS VISE

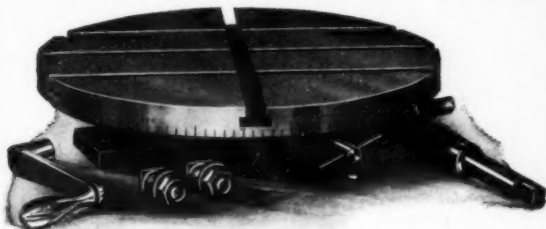


Light and exceptionally strong.
Removable steel jaw plates.
Hardened and ground guide bar.
Large Acme Thread Screw.
Full Nut.

No.	Width of Jaws	Depth of Jaws	Jaws Open	Weight	Price
D-4	4½"	1½"	4"	15 lbs.	\$12.00
D-6	6½"	1½"	6"	35 lbs.	\$18.00
D-9	9"	2½"	9"	70 lbs.	\$24.00

SHELDON MACHINE CO. 3251 Cottage Grove Ave., CHICAGO, ILLINOIS

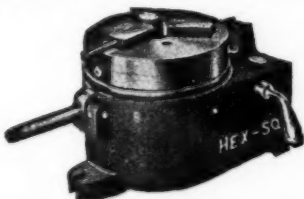
Hand Feed Rotary Tables



Two Sizes—11" and 18" Diameter

Can be used on any make of vertical, horizontal or profile milling machine.

Hex-Square Two-Way Fixtures



Two Sizes—One Inch and Two Inch

This fixture as illustrated will fill the majority of wants where large quantities of straddle or butt milling of a square or hexagon nature has to be done.

Also Manufacturers Of

Double end horizontal drills, milling machines and attachments, milling machine vises, dividing heads, index centers, single and multiple spindle, hand screw machines, cutter grinders, screw slotters, hand lathes, collet chucks, oval chucks.

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KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User
At Greatly Reduced Prices

\$115⁰⁰ F. O. B.
Factory

COMPLETE With All
Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at any price.

35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, positive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus—Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.

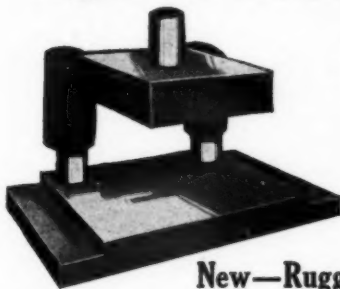


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Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N. Y., U.S.A.

Insure Your Dies Against Breakage—



Use the
U. S. Tool
STEEL
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New—Rugged—Strong !

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

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HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

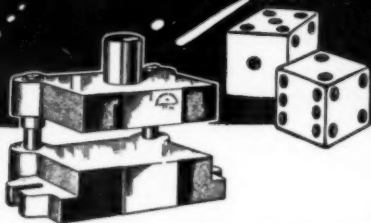
COST—No more than ordinary cast base sub-presses.

Send for Complete List of Styles and Prices

U. S. Tool Company, Inc.
AMPERE, N. J.

Your Dies

— are too
important
to gamble
with



Danly Standard Leader Pin Die Sets

absolutely eliminate shearing of dies, increase enormously the "pieces per grind" and cut the "depth per grind" amazingly.

You save 20 to 50% in first cost . . . immediate delivery from nearest warehouse, as easily as writing out a requisition upon your own stock room. Used and endorsed by over 4000 makers of stampings.

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No. 7 Roller Bearing Punch



Capacity $\frac{1}{4}$ -inch
through $\frac{1}{4}$ -inch.

Weight, $6\frac{1}{2}$ lbs.

No. 8 Imperial Punch with Base



Operating handles will
not become disengaged.

CAPACITY— $\frac{1}{4}$ " hole
thru $\frac{1}{4}$ " iron.

Weight, 16 lbs. Length
over all $25\frac{1}{2}$ ".

*Can Be Furnished With
or Without Base*

No. 12 Ball Bearing Punch



Capacity $\frac{3}{8}$ -inch through $\frac{1}{4}$ -inch iron

Weight, 11 pounds.

Will punch
channels up to
4 inches. Drop
forged, heat
treated through-
out. Sets rivets
as well as punch
holes.

Write for catalog and price list on entire line

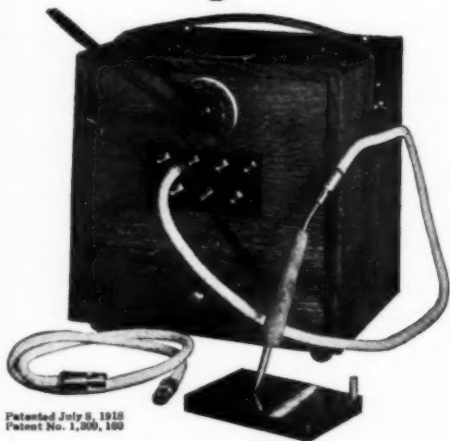
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Etchograph

Trade Mark



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With the ETCHOGRAPH, the original electric marker, and the only one having *six stages of heat*. Iron, steel or steelite can be marked in one-fifth the time required for other methods. Simple to operate—plug in at the nearest light socket and write as with a pencil. No acids, no fuss, no elaborate preparations necessary.

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Champion Tool Holders SAVE Expensive Tool Steel



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CHAMPION
Tool Holders are made of drop-forged steel, thoroughly case-hardened, and are equipped with an unbreakable "Mac-it" set screw.



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Champion Boring Tool

This tool is indispensable for inside threading and boring. Takes any length of cutter, which may be used down to short lengths. Cutters, drills, reamers, taps and many other tools can be used in this Holder.

Let us tell you more about our Turning Tools, Boring Tools, Planer Tools, Cutting-Off Tools, Threading Tools, Grooving Tools and the Champion Drill Holder.

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Springfield, Ohio

Cutting Keyways

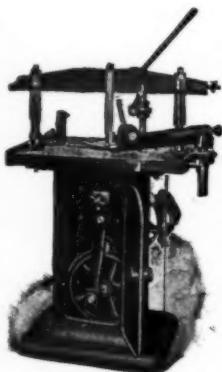
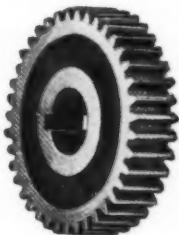
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**Insures Rapid,
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Whether you want quantity production of standard parts, or versatility to meet varied requirements, the Davis Keyseater gives complete satisfaction. Cuts keyways in pulleys, gear blanks, bell cranks, crank handles, etc., or can be used for slotting and grooving. Simply constructed, difficult to get out of order, and within its dimensions, produces accurate work at a low cost. Made in two sizes.

No. 1 cuts from $\frac{1}{16}$ to 1-inch

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Davis Keyseater Company

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Lower Your Keyseating Costs

With the NEW Catlin No. 1



*Rapid
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Durable
Efficient
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Economical*

The Catlin Keyseaters are popular because they are profitable—they have made good in machine shops of every size, as well as automobile plants, government shops, navy yards and many foreign factories.

Nos. 0, 1 and 8 Keyseaters have the crank motion, while all other sizes have the rack and pinion drive.

All Catlins are thoroughly efficient, and help to lower shop costs. The picture shows our No. 1 Keyseater.

Let us send you the large folder, which gives full details of construction and operation, and also some

Very Interesting Production Records!

Chattanooga Machinery Company

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MOTOR DRIVEN UNITS
1/2 to 5 H. P. 5 to 75 G. P. M.

VOLUME PUMPS

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always

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No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

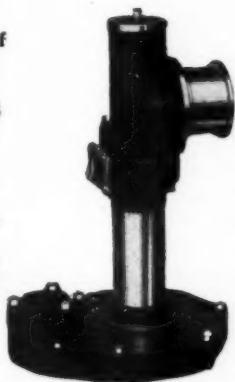
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FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

THE "GUSHER" The last word in Machine Tool Lubricant Pumps

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Belt or
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This
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In all things, but proverbially in mechanism, the supreme test of excellence is simplicity.

The "Gushers" are the simplest pumps made. They are free from all troublesome complications—no gears—no foot or relief valves—no packing nuts—no priming necessary—and grit, dirt and small chips pass through without injury to the mechanism. Easily installed, wonderfully efficient, and stand wear and tear.

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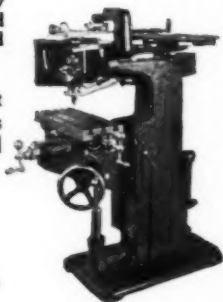
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in brass, steel or cast iron. Built
by a firm having over thirty years
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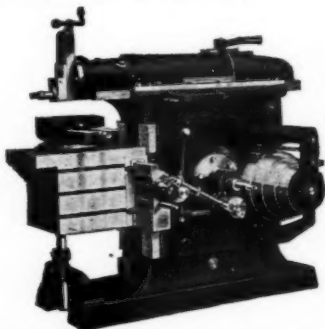
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Regular Equip-
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**15/16-inch
Geared Head
Motor Drive**

LET US SHOW how it meets **MODERN** needs
Carroll & Jamieson Machine Tool Co.
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Are Strong and Accurate

Modern Heavy Duty Lathes 14-16-18-20 and 24"
Single and double back geared, cone driven.

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Turret Lathe Drill Chucks

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Cutter Reamers or Taps can be set in this chuck to cut their exact size, and will not slip because you get the power directly behind the jaws. Standard for over fifteen years—glad to send you list of satisfied users.

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Shipped for FREE TRIAL if You Wish

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Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

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Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

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Speed Reducers

For every possible requirement for stepping down motor speeds, there's an IXL reducer that exactly fits your needs.

Spur—Worm—Herringbone

Reductions from 2 to 1 up to 50,000 to 1.

Send for 660 page catalog
 "Gear Problems."



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save an average of 50%

Dies, templates, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

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Cutter Grinders



*Send
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Bulletins*

Oliver Instrument Company, 1408 Maumee St., ADRIAN, MICH.

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All Kinds—Small

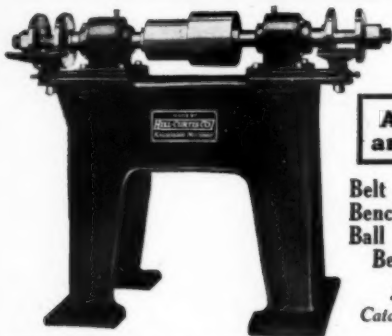


The most accurate made and prices reasonable. We carry a complete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

Write for Catalogue No. 70

CHICAGO STOCK GEAR WORKS
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**All sizes
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**Belt and Electric
Bench and Floor
Ball and Roller
Bearing**

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Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

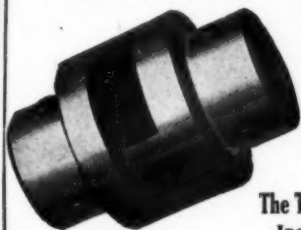
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HIGGINS *Flexible* COUPLING

SPECIFY the HIGGINS Flexible COUPLING for perfect alignment of shafts, each member running independently of its own bearings. HIGGINS Flexible COUPLINGS allow sufficient freedom to one or both shafts so that they may move or oscillate end-wise. Of simple but sturdy construction, they

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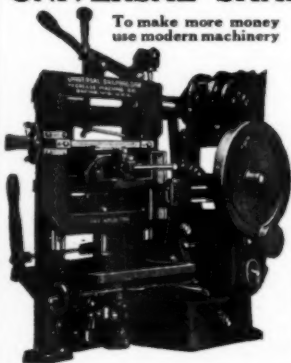
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**To make more money
use modern machinery**

**Different Principles
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Give The Most Of—

**Speed
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SIZES:

6"x6" -- 9"x9" -- 13"x13"

PEERLESS

HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

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Racine, Wisconsin

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Racine Shear Cut Production Saw—Positive screw feed, cutting time never varies. Blade life is trebled.

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The entire staff and resources of this organization are devoted to metal cutting problems. For almost twenty years all of our time has been devoted to the design and building of metal cutting machines.

The high efficiency and accuracy of present day Racine machines are the result of this specialization. The New Racine machines have established new cutting standards for the reciprocating saw. Write for complete information.

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HIGH-SPEED METAL CUTTING MACHINES

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We can supply
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**Pipe Threading and
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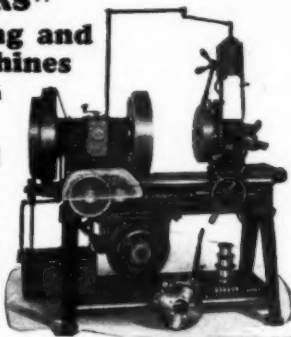
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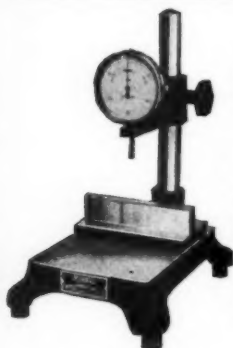
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Full line to meet all re-
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For rapid checking of parts to close limits by unskilled labor. Quickest and most accurate way to gauge pistons, piston pins, valve stems, bolts, flat stock, bushings, reamers, drills, arbors, taps, dies, gear blanks, and hundreds of other parts. Standard Equipment Model "70" Indicator, with which errors of less than .00025 are easily detected.

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and other FEDERAL models*

Federal Products Corporation
PROVIDENCE, R. I.

Western Branch: 7338 Woodward Ave., Detroit, Mich.

Save TIME and MONEY



by using the

HANDIEST RACKS

Ideal for Servicing Machines: Keep material beside lathe or screw machine, ready for instant use. Save operator's steps and enable him to keep his machine running constantly. No time wasted in getting material.

Ideal for Storage: Keep pipe, shafting and bar stock neatly piled and sorted. Occupy little space—thus out-of-the-way places may be utilized if desired.

Shipped on free trial—Order a set today

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Reduce Operating Costs to a Minimum

SIMPLE — QUICK ACTING — TIME SAVING

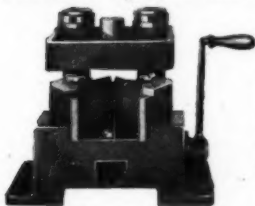


Illustration shows *Type B* tooling up. All types can be furnished either tooling up or not, as you prefer.

The *Cushion Clamp* feature conserves human energy, increases efficiency and reduces loading time, thereby increasing production. Ideal for making right or left hand parts in same jig—for drilling several parts in one jig. Saves time of designers, detailers, toolmakers and checkers. Close ranges of sizes and models. Plenty of loading, chip and lubricating clearance.

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Fine tools for fine hands

A complete line of bench and up-right power drills with many exclusive features of design developed during 50 years' experience.

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Bar Stock Racks



They will carry all the Steel that you can pile on them, without danger of arms bending or tipping over. For bars of 16 feet or longer three posts are required. Each post is a separate unit and can be set any place desired, for it is not necessary to fasten them to the floor. Single arm racks for placing against the wall.

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Use the A. M. Sensitive Drill

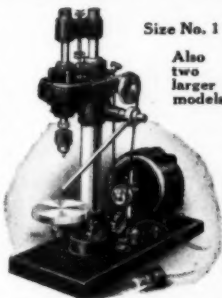
for Work of Highest
Quality—Accuracy

It will drill holes as small as .010" in diameter, yet is sufficiently sturdy to carry a drill 3/16" in diameter through any material—and up to 1/4" in softer materials. Can also be used for countersinking, chamfering, reaming, lapping, tapping, end milling, etc. Spindle speeds are constant with positive control. Highly recommended by users in practically every industry.

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Size No. 1

Also
two
larger
models



ADOLPH MUEHLMATT
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Winterhoff Portable Production Drills

No. 0 JUNIOR DRILL
10 1/2" Swing, 0 to 3/8" Capacity



\$55, F. O. B. Elkhart

Equipped with 1/4 h. p. motor, two step cone pulley giving speeds of 1100 and 2300 r. p. m., horizontal drive gives full power to the 1 1/4" endless belt furnished with machine. Driven cone has bearing support at each end; all parts accurately machined and interchangeable. *Positively the greatest value* ever offered in a machine of this kind. Furnished with square machined base at same price.

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Saws, Sanders. All motor driven.

Send for circulars describing these
machines or see your Dealer.

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STANDARD

Portable Electric Drills, Grinding,
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Made in 3 and 5 H. P.
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F. Ball Bearings.



Standard $\frac{1}{4}$ -in. and $\frac{5}{16}$ -in. Heavy Duty
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Your Motor $\frac{1}{8}$ - $\frac{1}{2}$ horse
power Plus Mall At-
tachments Plus Green
Rubber Shaft No. 2220
Equals a Handy Outfit.

In addition to this shaft
we also manufacture the
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shafts, over 100 different
machines to fill every
flexible shaft need, and a
complete line of working
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Makers of the Largest As-
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Machines and Attachments.



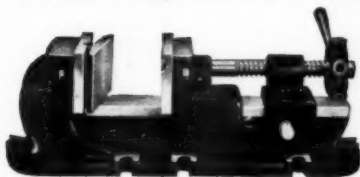
**Mall
Attachable Shafts**

\$35.00
COMPLETE

(Green Rubber
Covered)

Add 5% Denver and West

'Most Efficient Vise Made'



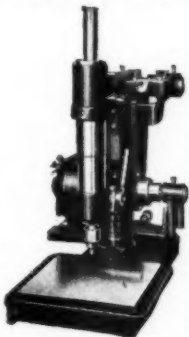
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Drill
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Made with one to four spindles, plain or ball bearing, belt or motor drive. *All parts interchangeable.*

The illustration shows our motor-driven, all-ball-bearing No. 0 High Speed Bench Drill which may be operated up to **10,000 R.P.M.**

*Full data and prices
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A Complete Motor-Driven 14" Sensitive Floor Drill

Price with motor,
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Or with Counter-
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Nothing Better for the quick and accurate drilling of holes $\frac{1}{2}$ " and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

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Drill Six Holes Simultaneously

— on your single spindle drill press

The U. S. Multiple Drill Head converts any single spindle drill into a multiple drill press with 2 to 6 adjustable spindles that utilize the same speeds and feeds you use for one. The double adjustment permits drilling in any pattern.

We can design special heads with adjustable or fixed spindles to fit your work.

Send us a layout of your drilling requirements. We will show you how to cut your costs.

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Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE \$45

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity 13/32" thru 1/4" steel, 11/32" thru 5/16". Punches up to 1/2". Weight, 70 lbs.

A good buy; can ship promptly

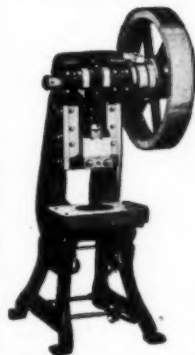
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(Est. 1890)

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They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

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Etco Tappers

Anything that can be tapped by hand can be tapped with an Etco tapper. The Etco taps blind holes as easily as those which go through—and it eliminates broken taps.

There is no friction to adjust in the Etco.

Production increased 100% to 500% on many jobs.

Don't condemn the taps you are using; try an Etco tapper for ten days without obligation.

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"Sensitive as
your Finger
Tips."

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Tight Joints that Swivel



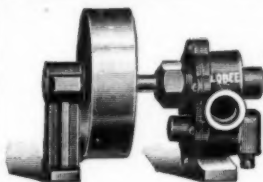
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These bronze couplings swivel freely but NEVER LEAK and can't be put out of commission. Just push together Quick-As-Wink, that's all! Can not become disconnected accidentally. Guaranteed for one year. Made in sizes from $\frac{1}{8}$ " to 4". Get descriptive bulletin and prices.

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For
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Made For $\frac{3}{8}$ ", $\frac{1}{2}$ ", 1", $1\frac{1}{4}$ "
Standard Pipe Connections

Write for Booklet "H"

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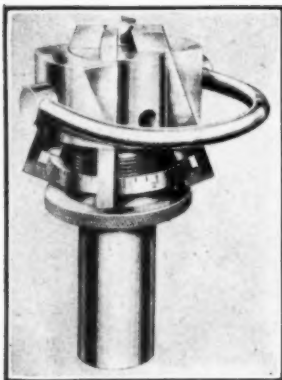
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**Better
Oilers**

287 Styles & Sizes



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REISINGER Adjustable Hollow Mills

No wrenches are required.

Micrometer adjustment of blades either way.

Interchangeable shanks.

Six sizes only are required for capacities from 1/16" to 2 1/2".

Will cut your set-up time and tool and production costs.

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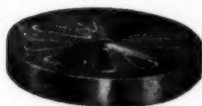
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"D & W" Flat & Rotary Magnetic Chucks



**Have Proved Time
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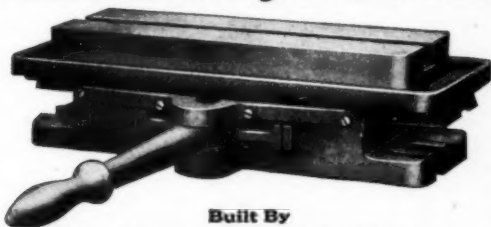


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Special chucks to order. Folder and price list on request.

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**Will Be Pleased to Quote on
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By Dun and Bradstreet Ratings

	Number Concerns
Exceeding \$1,000,000.....	1,483
\$500,000 to \$1,000,000.....	916
\$300,000 to \$ 500,000.....	948
\$200,000 to \$ 300,000.....	842
\$125,000 to \$ 200,000.....	1,305
\$ 75,000 to \$ 125,000.....	1,455
\$ 50,000 to \$ 75,000.....	1,162
\$ 20,000 to \$ 50,000.....	2,847
\$ 10,000 to \$ 20,000.....	1,879
\$ 5,000 to \$ 10,000.....	1,672
TOTAL, Private Concerns Rated over \$5,000..	14,509
Steam and Street Railway Mechanical and Purchasing Officials, Government and Muni- cipal Plants, Technical Schools, Foreign Dealers in American Machinery, Etc.,.....	3,470
TOTAL to Buyers of Known Responsibility..	17,979
*Concerns quoted in Dun or Bradstreet, but without Capital Rating.....	2,802
Concerns not yet in either Dun or Bradstreet, but in current Telephone Directories.....	1,799
Concerns rated below \$5,000	2,677
TOTAL CIRCULATION	25,257

*This group includes a considerable number of large concerns, and many small concerns of high credit, whose capital rating is not given by either of the commercial agencies.

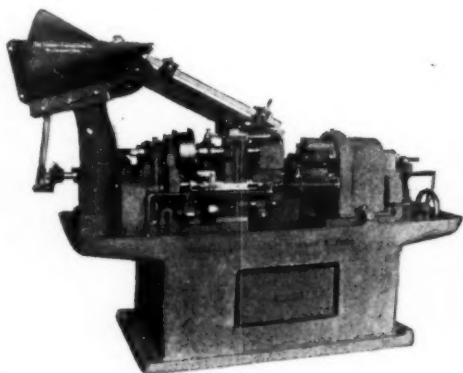
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For Bolts and Cap Screws
Capacity— $3/16$ "x1" to 1"x6"

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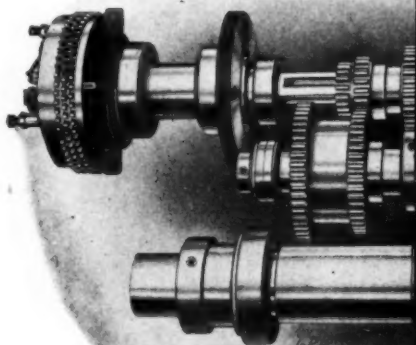


Shaves top and underneath
head of Cap Screws
Capacity $\frac{1}{4}" \times \frac{3}{4}"$ to $\frac{3}{4}" \times 5\frac{1}{2}"$

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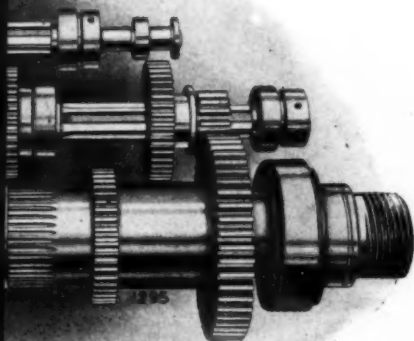
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Are On Timkens in
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**But All Of the Shafts
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**TYPE
RF-M4 MACHINE ¼ H. P.**

For
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For
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And
All Kinds of
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Of**

**Various Shapes
and Sizes
A Machine—**

For.
Many Purposes

**Attach to the
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EQUIPMENT

- Ball Bearing Hand Piece.
- 8 Assorted Rotary Files.
- 9 Assorted Grinding Wheels.
- 1 Rubber Polishing Drum.

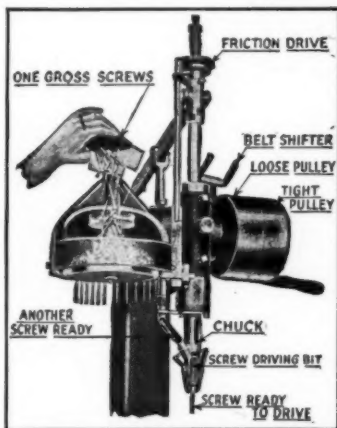
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Showing Magazine Feed of the Reynolds Automatic

The REYNOLDS Automatic Screw Driving Machine, with Automatic Feed, drives screws so economically that many users find it pays for itself three or four times a year. Simple to operate—just keep the hopper filled with screws—no handling of screws beyond that—press a foot lever and the machine does the rest. Screws are instantly and firmly imbedded. Time and labor saving costs of 65 to 85% over other methods are not unusual.

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Jan. 30, 1917

Type 6
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That Reaches Anywhere AUTEX Extension Reel

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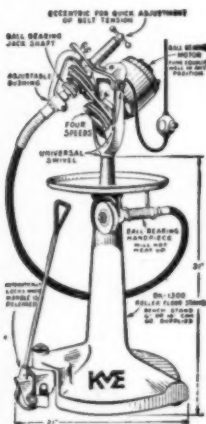
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Equipped with Rubber Covered Cord

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"The Machine of a Hundred Uses"

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SPEEDS UP TO 10,500

Non-Heating Shafts
Ball Bearing Handpieces

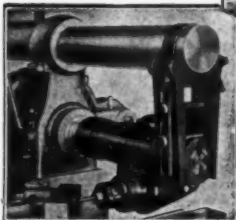
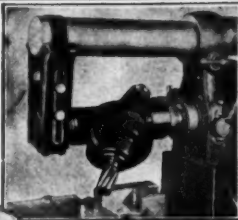
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REDUCE Set-ups on intricate work with the

Hevy-Du-T Universal Milling Attachment



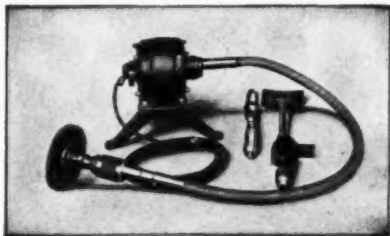
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FOREIGN AGENTS: *Fenwick Freres & Co., Paris, France*
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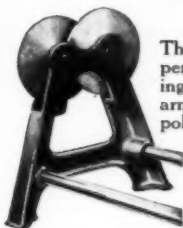


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per load and handle three to four loads per
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Always on the level



The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

Will set anywhere and is easily portable. In sizes

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**—Every Year on
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**TOWSLEY
TRUCKS**

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Every style
for every
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High Quality—Right Prices—Good Service
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Piston Rods

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Factory Seating

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Chucks

AT THE PRICE OF A CAST IRON CHUCK

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SAFETY TAPPING ATTACHMENT with the “Procunier” Safety Friction and “Double-Jaw” tap holder gives

**GREATER ACCURACY
and
LESS TAP BREAKAGE**

The Procunier Safety Friction Device is very easily adjusted. With it blind holes can be tapped just as easily as through holes, and without danger of breakage.

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12"x36"
Universal**

**ALL Grinding on
ONE Machine—**



**Saves
Time
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Does all kinds of grinding like a single purpose machine.

Machines are equipped with the new auxiliary coarse cross feed for surface grinding.

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Hartford Taper Gage

Locates Inaccuracies Instantly

When turning tapers on end mills, profile cutters, twist drills, reamers, lathes, etc., accuracy is all important. The Hartford Taper Gage enables the workman to tell instantly whether a taper is right.

Simple—Inexpensive—Reliable

Any inaccuracy down to .001" can be instantly detected. Adjustable over a wide range—from No. 0 to No. 14 taper.

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And Design and Develop Special
Automatic Machinery**

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Hartford Special Machinery Co.

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—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

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Just a Minute—

Don't you have a great many small parts to mill?

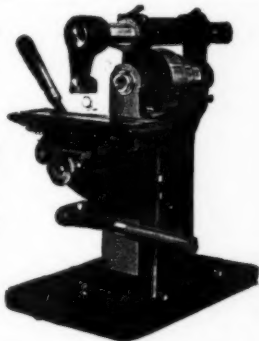
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Prices vary from...\$125 to \$220



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COLLETS



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We solicit your inquiry

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"Borgeson Universal Joints"

Are you a user of Universal Joints?

If so!

Remember well and bear in mind that a good Universal Joint is hard to find. But if you want one tried and true, you will want the "Borgeson" before you are through.

You will become not only a "Buyer" but a "Booster" for "Borgeson."

SIZES: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, 1 $\frac{1}{8}$, 1 $\frac{1}{4}$,
1 $\frac{1}{2}$, 1 $\frac{3}{4}$, 2, 2 $\frac{1}{2}$, 2 $\frac{3}{4}$.

Should you require Special Universal Joints, be sure to write for quotation.

*Complete description gladly
furnished upon request*

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Torrington, Conn.

For Sure Balance--

an absolutely level and solid "Way" is necessary
Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

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Are Most Convincing

Send us samples of your most difficult work, in close corners or out-of-the-way places, let us rivet them on the—

Grant Rotary Riveter

—and we will return them, with time and cost estimate.

The GRANT produces highly polished heads, without hammer or tool marks. Speed: a rivet a second. May be operated by unskilled labor—and it's *noiseless*.

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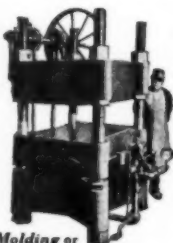
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Every Purpose

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The **HANDNIB**

**Costs Only \$32.50 Does Better
Work Than \$200 to \$300 Machines!**

Set it up in any vise, use it to cut sheet metal in any design *easily, accurately, quickly* by hand. Eliminates expensive machinery and laborious uncertain drilling.

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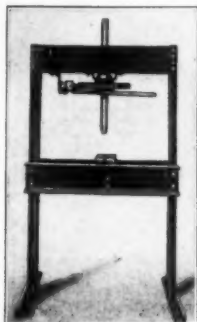


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Blades for
Special
Jobs



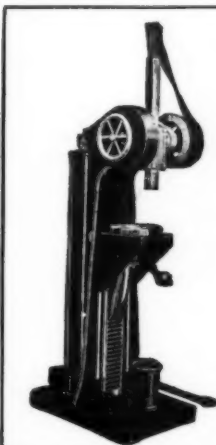
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For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

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showing 30 different sizes*

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Department B,
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The "CanTon" Portable Crane, Hoist and Truck

Handy—because one man and a "CanTon" will easily lift and carry what would be a hard task for 6 to 10 men.

Safe—because the new Safety Friction Load Brake can be added at small extra cost to both new and old "CanTons."

The *Economy* is obvious.

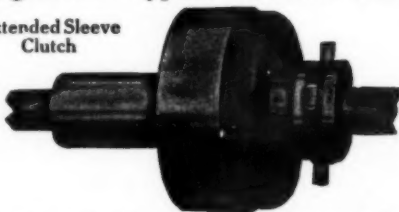
The several sizes are shown in Booklet E-8

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New York Office: 101 West 31st Street

Edgemont "Type B" Friction Clutch

Extended Sleeve Clutch



The "Type B" Friction Clutch is an improved expanding type. It fills the need of an efficient and inexpensive method of driving a large variety of machines.

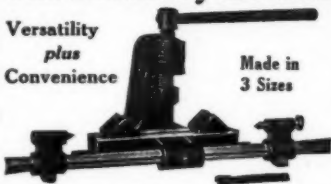
Furnished in pulleys, extended sleeves and cut-off couplings.

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The Accuracy and Wide Range

Versatility
plus
Convenience



Made in
3 Sizes

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Springfield
Straightening
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make it
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Whether it's a crank shaft or a turbine rotor you are testing, the Anderson is equally sensitive. With its 6 sizes it will balance anything that revolves, up to 24,000 lbs.

It requires no leveling or adjustment, no centers; its hardened spindles are not dented by use.

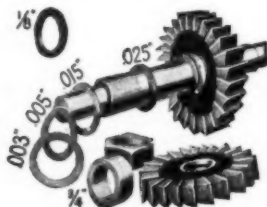
"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards..	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

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Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



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Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

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**"Scully-Jones"
Adjustable
Spacing Collar**

*For Milling Machine
Arbors*

**Hardened Ground
SAVE SET-UP TIME**

**"A GOOD COMBINATION"
HARDENED & GROUND SOLID SPACING COLLARS**

Ends are
ground parallel,
lengths
are accurate



Made of
Alloy Steel
Regularly
furnished with
new standard
keyways.

All thicknesses and standard arbors carried in stock for immediate delivery.

SCULLY-JONES & CO., Tool Division
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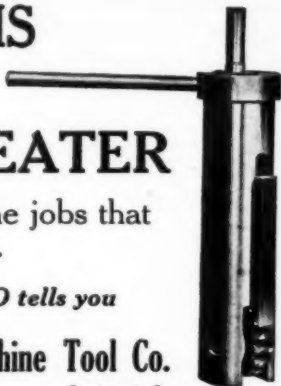
to use on the jobs that
trouble you.

Catalog O tells you

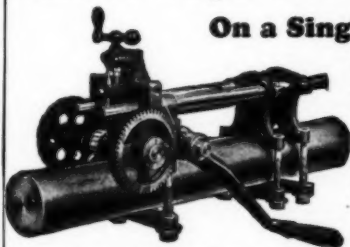
National Machine Tool Co.

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Cincinnati, O.



Often Pays for Itself On a Single Job—



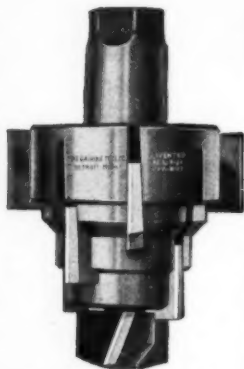
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Keyseater**

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in shafts up to 5"
diam., anywhere,
in any position.

Made in seven
sizes, hand or
motor driven. No dismantling—no fuss—invaluable in emer-
gencies. Over 10,000 in use. *Order one today and begin
saving money.*

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Spindle Is
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**Quick
Accurate
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Dependable**

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Bousher Co., N. F., South Bend, Ind.
Sundstrand Machine Tool Co., Rockford, Ill.

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Foster-Cable Machine Co., Syracuse, N. Y.
Racine Tool & Machine Co., Racine, Wis.

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Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 1901 So. Rockwell St., Chicago

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Norma-Hoffman Bearings Corp., Stamford, Conn.

Bearings, Roller
Norma-Hoffman Bearings Corp., Stamford, Conn.

Bearings, Thrust
Norma-Hoffman Bearings Corp., Stamford, Conn.

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Cincinnati Planer Co., Cincinnati, Ohio

Boring Machines, Horizontal
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Lambert Mch. & Engin'g Co., Cleveland, O.
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Schwerdtle Stamp Co., Bridgeport, Conn.

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Lourie Mfg. Co., 565 Washington, Chicago

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Economy Engineering Co., Willoughby, O.

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Smille & Co., C. M., Detroit, Mich.

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Canton Foundry & Mch. Co., Canton, Ohio

Crank Pin Turning Machine
Pedrick Tool & Machine Co., Philadelphia

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- Cutters, Keyseating**
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- Cylinder Boring Machines, Portable**
Padrick Tool & Machine Co., Philadelphia
- Demagnetizers**
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- Dial Indicators**
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- Die Sets**
Daisy Machine Specialties, Inc., 4913 Lincoln Ave., Chicago
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- Drilling Machines, Automatic**
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- Forgings, Hollow Bored**
American Hollow Boring Co., Erie, Pa.
- Furniture, Machine Shop**
New Britain Machine Co., New Britain, Conn.
Fellard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Western Tool & Mfg. Co., Springfield, O.
- Gauges, Cylindrical and Thread**
Federal Products Corp., Providence, R. I.

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Production Gauge Co., 2019 Fletcher St.,
Chicago

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New York

Gear Generators

Leon-Bradner Co., Cleveland, Ohio

Gear Grinders

Leon-Bradner Co., Cleveland, Ohio

Gear Hobbers

Triplex Machine Tool Corp., 50 Church St.,
New York

Gear Testers

Leon-Bradner Co., Cleveland, Ohio

Gears

Boston Gear Works Sales Company, Norfolk
Downs, Mass.
Chicago Stock Gear Works, 106 S. Jefferson,
Chicago
Foots Bros. Gear & Machine Co., 213 Curtis
St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Grinding Machines, Belt

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Peerless Surfacing Machine Co., Troy, N. Y.
Wells Sales Corp., 96 Warren St., New York

Grinding Machines, Bench

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Hess-Wolf Machine Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.

Grinding Machines, Cutter, Reamer and Tool

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., R. R., Cincinnati, O.
National Machine Tool Co., Racine, Wis.
Oesterlein Machine Co., Cincinnati, Ohio
Oliver Instrument Co., Adrian, Mich.
Stevens Inc., John B., 27 Cleveland Place,
New York
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical

Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Face

Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft

Keller Mch. Eng. Corp., 58A Washington St.,
Brooklyn, N. Y.

Grinding Machines, Internal

Mall Tool Co., 8389 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric

Cincinnati Electrical Tool Co., Cincinnati, O.
Hess-Wolf Machine Co., Cincinnati, O.
Keller Mch. Eng. Co., 58A Washington
St., Brooklyn, N. Y.
Mall Tool Co., 7730 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Porter-Cable Machine Co., Syracuse, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Grinding Machines, Snagging

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Stevens Inc., John B., 27 Cleveland Place,
New York
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap

Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Machines, Tool

Hill-Curtis Co., Kalamazoo, Mich.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades

Armstrong-Bloom Mfg. Co., 341 N. Francisco
Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Simonds Saw & Steel Co., Fitchburg, Mass.

Hack Saw Machines

Armstrong-Bloom Mfg. Co., 341 N. Francisco
Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Handles, File

Hyro Mfg. Co., 352 W. 18th, New York.

Handles, Soldering Iron

Hyro Mfg. Co., 352 W. 18th, New York.

Hob Grinders

Triplex Machine Tool Corp., 50 Church St.,
New York

Hoists, Portable

Canton Foundry & Machine Co., Canton, Ohio

Hose Couplings

Hunt & Son, C. B., Salem, Ohio

Hydraulic Machinery

Laurie Mfg. Co., 566 Washington, Chicago

Index Centers, Single and Multi Spd.

Stevens Inc., John B., 27 Cleveland Place,
New York

Jigs and Fixtures

Hartford Special Mch. Co., Hartford, Conn.
Slewek Tool & Die Co., Detroit, Mich.

Keyseating Machines

Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mch. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments

Cleo Machine Tool Co., Cincinnati, O.

Lathe Turrets

Maxwell Products Co., Cleveland, O.

Classified Finding Index

Lathes, Bench
Hardinge Brothers, Inc., 1770 Bortean Ave.,
Chicago
Monarch Machine Tool Co., Sidney, O.

Lathes, Engine
American Tool Works Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Cincinnati Lathes & Tool Co., Cincinnati, O.
Cisno Machine Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Bortean Ave.,
Chicago
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
McCabe Lathe & Machinery, Corp., J. J.
149 Broadway, New York
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Cap
Rahn-Larson Co., Cincinnati, O.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathes, Gap
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathes, Hand
Stevens Inc., John B., 27 Cleveland Place,
New York

Lathes, Manufacturing
Sundstrand Machine Tool Co., Rockford, Ill.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathes, Precision
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathes, Short Bed
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.

Lathes, Too Room
Cisno Machine Tool Co., Cincinnati, Ohio.

Lathes, Turret
Bradford Machine Tool Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow
Hyo Mfg. Co., 852 W. 13th, New York.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Metalworker
Shaw-Palmer-Bakewell Co., Los Angeles,
Calif.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Modern-Bond Corp., Wilmington, Del.
Oesterlein Machine Co., Cincinnati, Ohio
Porter-Cable Machine Co., Syracuse, N. Y.
Stevens Inc., John B., 27 Cleveland Place,
New York
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Tables
Modern-Bond Corp., Wilmington, Del.

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Horizontal
Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Manufacturing
Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Spline
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Milling Machines, Vertical
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow
Genesee Mfg. Co., Rochester, N. Y.
Reininger Mch. Tool Corp., Rochester, N. Y.

Motors, Electric
Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped
Schwerdtle Stamp Co., Bridgeport, Conn.

Oil Cups
Gits Bros. Mfg. Co., 1940 E. Kilbourn Ave.,
Chicago
Tucker, W. W. & C. F., Hartford, Conn.

Oil Extractors
Tethurst Machine Works, Troy, N. Y.

Oil Grooving Attachments
Cisno Machine Tool Co., Cincinnati, Ohio

Oil Hole Covers
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Pattern Shop Machinery
Towley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel
Dunly Machine Specialties, Inc., 4913 Lincoln
Ave., Chicago

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines
Gateman Mfg. Co., Mantowoc, Wis.
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Dieheads
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises
Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Planing Machines
Cincinnati Planer Co., Cincinnati, Ohio
Cleveland Planer Co., Cleveland, Ohio

Point Thinning Machines
Oliver Instrument Co., Adrian, Mich.

Classified Finding Index

Polishing and Buffing Machines

Cincinnati Electrical Tool Co., Cincinnati, O.
 Cleco Machine Tool Co., Cincinnati, O.
 Hill-Curtis Co., Kalamazoo, Mich.
 Hisey-Wolf Machine Co., Cincinnati, O.
 Mail Tool Co., 7730 S. Chicago Ave., Chicago
 New Britain Machine Co., New Britain, Conn.
 North Side Tool Co., Dayton, Ohio
 Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
 Lourie Mfg. Co., 665 Washington, Chicago
 Nicholson & Co., W. H., Wilkes-Barre, Pa.
 Sheldon Machine Co., 8253 Cottage Grove Ave., Chicago
 Wilson, R. K., Buffalo, N. Y.

Presses, Broaching

Lourie Mfg. Co., 665 Washington, Chicago

Presses, Drawing

Lourie Mfg. Co., 665 Washington, Chicago

Presses, Flanging

Lourie Mfg. Co., 665 Washington, Chicago

Presses, Foot

Rockford Iron Works, Rockford, Ill.
 Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing

Lourie Mfg. Co., 665 Washington, Chicago
 Lucas Machine Tool Co., Cleveland, O.

Presses, Forming

Lourie Mfg. Co., 665 Washington, Chicago

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
 Lourie Mfg. Co., 665 Washington, Chicago
 Lucas Machine Tool Co., Cleveland, O.
 Rockford Iron Works, Rockford, Ill.

Presses, Punch

Leathwaite Mch. Co., T. H., 417 E. 31st., N. Y.
 Rockford Iron Works, Rockford, Ill.

Presses, Screw

Fall River Grinding & Machine Co., Fall River, Mass.
 Jarecki Mch. & T. Co., Grand Rapids, Mich.
 Tewksley Mfg. Co., John T., Cincinnati

Presses, Wheel

Lourie Mfg. Co., 665 Washington, Chicago

Profiling Machines

Oliver Instrument Co., Adrian, Mich.

Pulley Machinery

Avery Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split

Conway Clutch Co., Cincinnati, O.

Pumps, Coolant

Puffo Specialties Co., Blanchester, O.
 Loboe Pump & Mch. Co., Buffalo, N. Y.

Pumps, Hydraulic

Loboe Pump & Mch. Co., Buffalo, N. Y.
 Lourie Mfg. Co., 665 Washington, Chicago

Pumps, Lubricant

Ruthman Machinery Co., Cincinnati, O.

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.
 Wittek Mfg. Co., 2532 S. Kedzie Ave., Chicago

Punch, Shear and Bender, Hand

Armstrong-Bium Mfg. Co., 841 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Bium Mfg. Co., 841 N. Francisco Ave., Chicago
 Hendley & Whittemore Co., Beloit, Wis.
 Hyro Mfg. Co., 863 W. 19th, New York
 Leathwaite Mch. Co., T. H., 417 E. 31st St., New York
 Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
 Leathwaite Mch. Co., T. H., 417 E. 31st., N. Y.
 Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.
 Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Reamers, Adjustable

Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding

Lambert Mch. & Engin'g Co., Cleveland, O.

Reamer Holders

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machine Equipment

Linsley Bros. Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rad Cutters

Armstrong-Bium Mfg. Co., 841 N. Francisco Ave., Chicago
 Hendley & Whittemore Co., Beloit, Wis.
 Leathwaite Mch. Co., T. H., 417 E. 31st., N. Y.
 Tucker, W. W. & C. F., Inc., Hartford, Conn.

Rotary Tables, Hand Feed

Stevens Inc., John B., 27 Cleveland Place, New York

Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.

Saws, Metal Cutting Circular and Band

Simonds Saw & Steel Co., Fitchburg, Mass.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric

Hisey-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic

Bernolds Machine Co., Mansfield, Ohio

Screw Machines, Automatic

New Britain Mch. Co., New Britain, Conn.

Seam Welders, Electric

Welding Appliance Co., 2111 W. Lake St., Chicago

Set-Up Appliances

Standard Shop Equip. Co., Inc., Philadelphia

Shafts, Flexible

Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.

Mail Tool Co., 7730 S. Chicago Ave., Chgo.

Stow Flexible Shaft Co., Philadelphia, Pa.

Strand Co., N. A., 6001 N. Lincoln St., Chgo.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

American Tool Works Co., Cincinnati, O.
 Osborne & Sexton Mch. Co., Columbus, O.
 Rhodes Mfg. Co., Hartford, Conn.
 Smith & Mills Co., Cincinnati

Springfield Machine Tool Co., Springfield, O.

Shears, Alligator

Canton Foundry & Machine Co., Canton, O.

Shears, Hand

Armstrong-Bium Mfg. Co., 841 N. Francisco Ave., Chicago
 Hendley & Whittemore Co., Beloit, Wis.
 Leathwaite Machine Co., T. H., 417 E. 31st St., New York
 Tucker, W. W. & C. F., Inc., Hartford, Conn.
 Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Shears, Power
Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Slotting Machines, Screw Head
Stevens Inc., John B., 27 Cleveland Place,
New York

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foots Bros. Gear & Machine Co., 213 Curtis
St., Chicago
Gaterman Mfg. Co., Mantowoc, Wis.
Stecker Co., Chan., 2452 N. Greenview Ave.,
Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers
Foots Bros. Gear & Machine Co., 213 Curtis
St., Chicago

Sprockets
Foots Bros. Gear & Machine Co., 213 Curtis
St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St.,
Chicago
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave.,
Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Towley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Stud Setters
Precunier Safety Chuck Co., 18 S. Clinton
St., Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Gaterman Mfg. Co., Mantowoc, Wis.
Precunier Safety Chuck Co., 18 S. Clinton
St., Chicago

Tapping Machines and Attachments
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Claco Machine Tool Co., Cincinnati, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson
Ave., Brooklyn, N. Y.
Gaterman Mfg. Co., Mantowoc, Wis.
Hamm and Mfg. Co., Cleveland, Ohio
Leland-Gifford Co., Worcester, Mass.
Precunier Safety Chuck Co., 18 S. Clinton
St., Chicago
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Thread Dies
Colven, J. M., Yonkers, N. Y.

Thread Millers
Leas-Brauer Co., Cleveland, Ohio
Triplex Machine Tool Corp., 60 Church St.,
New York

Thread Milling Attachments
Claco Machine Tool Co., Cincinnati, O.

Threading Machines
Gaterman Mfg. Co., Mantowoc, Wis.
Rickert-Shafer Co., Erie, Pa.

Threading Tools
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tool Holder Bits
Simonds Saw & Steel Co., Pittsburg, Mass.

Tool Holders
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks
Chicago Wire Chair Co., 619 N. La Salle St.,
Chicago

Tool Stands
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave.,
Chicago

Tools, Boring
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Spot Facing
Genesee Mfg. Co., Rochester, N. Y.
Reidinger Mchs. Tool Corp., Rochester, N. Y.

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave.,
Chicago

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Hargeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk
Downs, Mass.

Used and Rebuilt Machinery
Aetna Mch. Co., 565 W. Washington, Chgo.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 60 Church St., New York
Bernstein & Co., Geo. M., 649 W. Washing-
ton Blvd., Chicago
Bartolette Machine Tool Co., Inc., Jersey
City, N. J.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 134 South
Clinton, Chicago
Cincinnati Mch. & Supply Co., Cincinnati, O.
Davis Machinery Exchange, Toledo, O.
Donahue Steel Products Co., 74th and
Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Emmerman & Co., Louis E., 1761 Elston Av.,
Chicago

Empire Machinery Exchange Co., Inc.,
Cleveland, Ohio
Essley Machinery Co., E. L., 555 Washington
Bldg., Chicago
Foster Machinery Co., Cleveland, O.
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington
Bldg., Chicago
Hyman & Sons, Joseph, Philadelphia
Indianapolis Mch. & Supply Co., Indian-
apolis, Ind.
International Mch. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. G.,
St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, O.
Kinsey Co., E. A., Cincinnati, O.
Klauber Mch. Co., E. L., St. Louis.
Lee Machinery Co., Inc., Detroit, Mich.
Little Co., W. F., Cleveland, O.
Lucas & Son, Inc., J. L., Bridgeport, Conn.
McCabe Lathe & Machinery Corp., J. J.,
149 Broadway, New York
McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Manning, Maxwell & Moore, Inc., 27 No.
Jefferson, Chicago
Marr-Galbreath Mch. Co., Pittsburg, Pa.
Marsh Machinery Co., A. R., Cleveland, O.
Midwest Equipment Co., 1719 W. Van Buren,
Chicago
Mid-West Machine Tool & Supply Company,
Davenport, Iowa
Milne Machinery Co., Saginaw, W. S., Mich.

Classified Finding Index

Used and Rebuilt Machinery—Cont.

Mellor Machy. Co., Chas., 118 S. Clinton St., Chicago
 Morey and Co., Inc., 408 Broome St., N. Y.
 Motch & Merryweather Machinery Co., Cleveland, O.
 Nelson Machinery Co., Green Bay, Wis.
 Nile Tool Works Co., Hamilton, O.
 Norton-Broadway Mch. Co., Cincinnati, O.
 O'Brien Machinery Co., Philadelphia
 Osborne & Sexton Machy. Co., Columbus, O.
 Randie Machinery Co., Cincinnati, O.
 Reeve-Fritts Co., 27 S. Desplaines, Chicago
 Reliance Mch. Sales Co., Pittsburgh, Pa.
 Rentachler & Co., J. P., 805 W. Washington Blvd., Chicago
 Riverside Machinery Depot, Detroit, Mich.
 Rosenfeld Mch. Co., 942 W. Lake St., Chgo.
 Russell Machine Co., Pittsburgh, Pa.
 Scott-Bansbach Mch. Co., 130 S. Clinton, Chicago
 Selfrest-Elsard Machinery Co., Dayton, O.
 Severin-Strafer Machinery Corp., 39 Church St., New York
 Simmons Machine Tool Corp., Albany, N. Y.
 Stecher Machinery Co., A. M., 418 Mid-City Bank Bldg., Chicago
 Strong, Carlisle & Hammond Co., Cleveland
 Syracuse Supply Co., Syracuse, N. Y.
 Taylor-Hall Welding Corp., Worcester, Mass.
 Tubor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
 United Mch. & Supply Co., St. Louis
 Wayne Machinery Co., Ft. Wayne, Ind.
 Wertman Mch. Co., M. A., Cleveland, O.
 West Penn Machinery Co., Pittsburgh, Pa.
 White Machy. Co., A. D., 108 N. Jefferson St., Chicago
 Wintzler, Herman L., Philadelphia

Vises, Drilling Machine

Armstrong-Bloom Mfg. Co., 341 N. Francisco Av., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
 Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago
 Marsh Machinery Co. A. R., Cleveland Ohio
 Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'

New Britain Machine Co., New Britain, Conn.
 Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago
 Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Hartford Special Mch. Co., Hartford, Conn.
 Marsh Machinery Co. A. R., Cleveland, Ohio
 Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago
 Stevens Inc., John B., 27 Cleveland Place, New York

Vises, Shaper

Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago

Welders, Electric Spot

Taylor-Winfield Corp., Warren, O.

Welding Head, Seam, Electric

Welding Appliance Co., 2111 W. Lake St., Chicago

Wood Working Machinery

Hendley & Whittemore Co., Balot, Wis.
 New Britain Machine Co., New Britain, Conn.
 Porter-Cable Machine Co., Syracuse, N. Y.
 Towley Mfg. Co., John T., Cincinnati

Worms

Massachusetts Gear & T. Co., Woburn, Mass.

Wrenches, Nut

Greene, Tweed & Co., 109 Duane St., N. Y.

Wrenches, Ratchet

Greene, Tweed & Co., 109 Duane St., N. Y.



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Grinder, 5"x18" Ott plain.
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Lathe, No. 4 Elgin preci., with bench
Lathe, No. 4 Cataract precision.
Lathe, 10"x5' P. & W., tool makers.
Lathe, 11"x5' Star, c. r.
Lathe, 11"x5' Barnes, c. r.
Lathe, 16"x6' South Bend, q. c. g.
Lathe, 16"x8' Flather, q. c. g.
Lathe, 18"x6' Ryerson, q. c. g.

Lathe, 24"x12' Peerless, c. r.
Miller, No. 2 Rockford, plain.
Miller, No. 2 Ford-Smith universal.
Miller, Briggs Mfg. 16, 20, 42" fds.
Planer, 24"x24"x6' Rockford.
Press, No. 2 V. & O., o. b. i.
Press, No. 3-P Am. Can solid bk.
Press, No. 1 Massillon trim.
Shaper, 7" Rhodes crank.
Shear, 30" Queen City for 18 ga.
Shear, No. 13 Niagara ring and circle for 20 ga.
Shop saw, 6x6 Racine h. s.
Shop saw, 6x6 Peerless h. s.
Woodworker, universal motor drive.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Arbor presses, Eames No. 6.
Baling press, Champion sheet metal.
Bolt threader, Acme 3 hds. 1 1/2" cap.
Boring mills, 12 Bullard 42" low price
Chain hoists, Yale & Towne 1 1/2 & 2-ton
Demagnetizer, Walker.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G 1-sp. h. s., b. b. floor.
Drills, H. & W., Kokomo 1-spdl.,
Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g. & tap.
Furnace, Holcroft 92 k. w. annealing.
Grinder, Heald No. 60 cylinder.
Grinders, modern internal; Blount
30", wet (2).
Grinders, St. Louis No. 9.
Grind saws, 4x4, 6x6 & 2 Racine Jrs;
Atkins 4x4"; Atkins 8x8 h. s.,
Marvel No. 2, Racine 6x6, h. s.
Hammer, Bement-Niles 1100 lb. st.
Lathes, Schumacher & Boye, 42"x16"
q. c. g.; South Bend 24"x14"; South
Bend 21"x12" q. c. g.; Davis 22"x10";
Whitcomb-Blaisdell 22"x8" q. c. g.
American 20"x9"; Monarch 16"x8";
Porter-McLeod 16"x8"; all q. c. g.;
40 other assorted sizes.
Milling machines, Kempsmith No. 2;
Ohio No. 20 plain; Becker "SD"
vertical, rotary table. 17200 lbs.;
American No. 1 1/2 universal; B. & S.
No. 3 vert., s. p. d., with rotary tbl.;

Ohio 34; LeBlond No. 3-H plain;
Brown & S. No. 3 pl.; Becker No.
4-B vert; B. & S. No. 3 B plain,
s. p. d.; Kempsmith No. 3 univer-
sal; No. 1 Kempsmith plain.
Pipe machine, Curtis 3", motor dr.;
Merrill 4" belt drive; B. & K. 8".
Planers, Gray 28"x28"x6", 1 head;
Cincinnati 36"x36"x18" 2 heads.
Punches, W. & W. No. 17 punch and
shear.
Punch presses, Swaine No. 29 o. b. i.
Willard No. 4-A o. b. i.; Bliss No.
19 o. b. i., (2), Federal No. 1 & 2.
Pyrometer, Thwing elec., with rec.
Rivet spinner, Grant.
Rolls, Badger 50" Pyramid power
rolls, 5" dia. 1/2" cap.
Screw machine, Gridley 1-spdl. 24"
auto.; Cleveland 1 1/2" auto.; W. & S.
No. 2 hand; P. & W. No. 2 1/2 hand;
Foster No. 3 hand; Woods No. 2
tilted turret head; Bardons & O.
No. 7; National-A. No. 52 auto.,
4-sp., m. d. B. & S. No. 00 auto.
Shapers, Whipp 12", 16" & 20"; Cinti.
20", b. g.; Ohio 20"; Ohio 16";
American 16" b. g.; S. M. 16";
Steeptoe 14" Barker 24" b. g.;
Cincinnati 24" Queen City 24" b.
g., Barker 18" b. g.
Shears, 60" thrt. rotary slitting, (2).
Welders, butt, Federal, 1/2" rds.

USED AND REBUILT MACHINERY

FOR SALE BY

Herman L. Winterer,

943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17' 44" Bement-Miles.
37"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q. c. g.
27"x12' Bullard.
26"x16' 6" American, q. c. g., grd. hd.
26"x11' Wickes, q. c. g.
25"x10' Niles, q. c. g.
19"x10' Draper, patent head.

18" x 7' Chard, d. b. g., semi q. c. g.
15" x 8' Sidney, q. c., d. b. g., t. a.
14" x 6' Springfield, latest type, tool room type, t. a.
14" x 6' Lodge & Shipley, patent head, taper, pan bed.
14" x 8' Lodge & Shipley, q. c.

TURRET LATHES.

34"x25" Pond, triangle.
31"x6" Pratt & Whitney, hollow hex.
19"x7' Fay & Scott, back grd.
No. 224 Garvin Monitor.
14" x 6 Warner & Swasey.

No. 3 Foster sc. machines 1-5/16" wire feed, (2).
14"x9" Cincinnati-Acme, wire feed.
No. 4 B. & S., bar feed, all auto. fds.
No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES.

45" Almond, sens. radial, post type.
40" Barnes horizontal radials, (3).
26" Aurora, sliding head.

24" Foote-Burt heavy duty.
20" Excelsior, b. g.
21" Aurora, b. g., p. f.

MILLING MACHINES.

No. 5 Cincinnati, table 94"x50".
No. 5 Becker Brainard, vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.

No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Becker universal milling machine.

PLANERS AND SHAPERS.

45"x37"x9" Sellers, 2 heads.
45"x45"x12" Gray, 2 heads.
42"x36"x14" Cincinnati, 4 heads.
25" Woodward & P., crk., gear box.

45" Morton draw-cut shaper.
30"x30"x8" American, 1 head.
15" Lodge & Davis shaper.

BORING MILLS.

Boring mill, car wheel, 60" Newton.
42" Bullard, 2 swivel heads, (2).
Boring mill, No. 1 Sellers hor., 24" bar.

Boring, drilling and milling machine, 17' Bement-Miles horiz.

PIPE AND BOLT MACHINES.

4" & 8" Eaton, Cole & B., pipe.
6" Cox, quick opening dies.

4" Armstrong, No. 00 pipe machine.

MISCELLANEOUS.

Arbor press, No. 3 Greenerd, 36" bet. columns.
Centering mche., 5" Whiton, dbl. sp.
Cold saw, No. 6 Nutter & Barnes.
Elec. hoist, 1-ton Link Belt, 3ph. a.c.
Generator, No. 100 Oxweld acetyl.
Grinder, 13"x5' Landis universal.
Grinder, No. 8 Diamond, double end, heavy type.
Grinders, disc, No. 17 Bealy.
Grinders, several dbl. end electric.
Hammers, 15, 25 & 40 lbs. Bradley helve.
Hammer, No. 2 Beaudry-Champion, 50 lb.
Hammers, 60lb. Bellefonte upright, 2.
Keyseater, Morton 18" stroke.
Keyseater, No. 4 Catlin, m. d.
Punch press, No. 2 Cons., flywheel.

Punch or gate shears, 72" Cleveland multiple, 15" throat.
Punch & shear, No. 4 Long & A., double end, 24" throats.
Punch and riveters, new Doty (2), one 35" stake and one 30" stake.
Punch presses, all sizes, (55).
Riveter, 3/16" Grant, on column.
Riveter, air, 6' gap Allen, cap. 14".
Riveter, air, 6' Allen, cap. 14".
Saw, No. 7K Atkins Kwick-Kut.
Rolls, 4' drop end corrugated.
Saw, Q. M. & S. No. 4-B universal, 32" blade.
Shear, 8' Ohl, No. 20 ga.
Slotter, 14" Niles.
Slotter, 34" Rhodes vertical.
Tire press, hyd., 60-ton Defiance.
Tooth rounding machine, S. & S.

Send for our latest 44-page illustrated Catalog and Price List.

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FOR SALE BY

W. P. Little Co., - - West 9th & Front Sts., Cleveland, O.

DRILL PRESSES.

No. 25 Foote-Burt heavy duty. | Type F Baker heavy duty.

PLANERS.

26"x26"x8' Gray, one head. | 32"x32"x14' Pond, two heads.

SCREW HEAD SHAVING MACHINES.

2 No. 2 Garvin screw head shaving machines, with screw head cross slides.

SPLITTING SHEARS.

4" capacity Columbus | 4" capacity No. 32 Rock River.

MISCELLANEOUS.

Keyseater, No. 2 Baker.

32"x40" Hoeval sand blast tumb. bl.

2"x24" J. & L. flat turret lathe.

E G-22 Ferracute geared arch press.

18" Cincinnati b. g. miller.

26" Cin. semi-automatic face mill.

Sprue cutter, 4" cap. Tessmer.

Straightening roll, 42", 7 roll.

150 other tools in stock. Send us your inquiries.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

BORING MILLS.

36" Niles, 2 heads.

36" American, 2 heads.

42" Bullard, 2 heads.

50" Niles, 2 heads.

52" Bickford, 1 head.

23" Rochester horizontal.

3" Lucas horizontal cone drive.

6" Gray horizontal.

LATHES.

18"x8' Lodge & Shipley, q. c.

27"x16' Lodge & Shipley, q. c.

20"x10' Hendey, q. c.

32"x16' Wickes.

24"/28"x18"x14' McCabe, 2 spindle.

38"x20' Bradford.

3-20"x3' American, q. c.

42"x24' Bradford.

MILLING MACHINES.

No. 2B Brown & Sharpe, heavy.

No. 4 Brown & Sharpe universal.

No. 2 Brown & Sharpe, universal.

No. 4 Cincinnati universal.

No. 4 Brown & Sharpe, universal.

No. 4 LeBlond plain.

No. 13 Brown & Sharpe plain.

P. & W. and Brown & S. hand.

PRESSES AND SHEARS.

No. 3 Toledo inclinable.

No. 4 Toledo inclinable.

No. 183 Stiles Parker inclinable.

No. 19-C Bliss inclinable.

No. 68 N Bliss, inclinable.

No. 17 Williams-White p. & s.

No. 1 Long & A. punch and shear.

No. 723 Toledo incl.

No. 3 Hilles & Jones punch and shear, double end.

No. 6-A Willard inclinable.

4" Long & Allstatter gate shear.

No. 57 Toledo.

GRINDERS.

16"x36" Norton cylindrical.

16"x72" Brown & Sharpe.

Nos. 11 & 12 Brown & Sharpe.

No. 14 Pratt & Whitney vertical.

Heald cylinder (2).

No. 10-A Bryant.

Bath & Walker surface.

6"x20" Webster & Perks.

PLANERS.

24"x 8' Pond, 2 heads.

38"x12' Gray, 2 heads.

30"x16' Gray, 2 heads.

42"x18' American, 2 heads.

30"x 8' Gray, 2 heads.

SHAPERS.

15" Ohio plain, crank.

20" and 24" Hendey.

16" Queen City, b. g. crank.

24" Queen City, single pulley.

30" Smith & Mills, single pulley.

25" Smith & Mills, crank.

MISCELLANEOUS.

No. 3 Ajax Bulldozers, with motor.

5' American semi-univ. radial.

Four spindle Gridley and Acme automatics.

400 ton Caldwell wheel press.

24" and 34" single spindle Gridley automatic.

Acme bolt cutter, 3 spindle.

Peerless and Racine power saws.

Barnes four spindle auto. drill.

More than 300 good machine tools in stock.

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J. L. Lucas & Son, In.,

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TOTE BOXES

1,000 brand new nesting type tote Boxes, 20x12x6 $\frac{1}{2}$, 16 gauge steel with lapped corners and draghole handles, at \$1.00 each.

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Marr-Galbreath Machinery Co.,

55 Water St., Pittsburgh, Pa.

Air compressor, 12 cu. ft. Natl. belt.
Air compressor, No. 4 Curtis (new).
Air compressor, 25 cu. ft. Caldwell.
Arbor presses, Nos. 0, 1, 2 & 3.
Band saw, 36" cross-cut (Wood).
Bolt cutter, 14" Morgan, double hd.
Bolt cutter, 14" Acme, triple head.
Boring mill, 24" Bullard, side hd. m. d.
Boring mill, 54" Bement-M., 2 hds.
Boring machine, Rockford No. 2 horizontal, 38" bar.
Derrick, steel, stiff lg. 15-ton, 60' boom.
Die sinker, Jackson, 48" x 13".
Draw bench, Oliver 6' belted.
Drills, 25" Barnes, b. g., p. f.
Drill, 32" Cincinnati, b. g., p. f., m. d.
Floor crane, 4000 lb. cap., (hand).
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Gear and pinion cutter, No. 3 Sloan & Chace.
Grinder, No. 1 Norton univ. t. & c.
Grinder, No. 2 Woods, univ. t. & c. m. d.
Grinder, No. 18-D Rowbottom.
Grinder, No. 60 Heald, 19" arm.
Grinder, surface, No. 2 B. & S., m. d.
Hack saw, Atkins, cap. 8" x 8".
Hack saws, No. 5 Marvel, 6" x 6".
Hack saw, 12x15" Racine, g. b., m. d.
Hack saw, 6x6 Racine.
Hammer, 2500 lb. Chbg., s. f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammers, strn. s. f. 600, 1100, 1500 lbs.
Hammers, 40 lb. Bradley.
Hammer, 250 Chbg. board drop.
Hammer, drop, 100 lb. Toledo.
Keyseater, No. 2 Davis.
Keyway cutter, 24" Morton, cap. 24".
Lathe, 6" x 24" Wade, bench.
Lathe, 9" Hardinge, turret, bench.
Lathe, 18" x 6" Hendey, q. c. g., t. a.
Lathe, 18" x 8" Mueller, q. c. g.
Lathe, 18" x 8" Cisco, q. c. g.
Lathe, 18" x 9" Lehman, q. c. g. t. a.
Lathe, 18" x 10" Bradford q. c. g. t. a.
Lathe, 18" x 12" Lodge & Shipley q. c. g. t. a.
Lathe, 24" x 14" Porter, plain change.
Lathe, 24" x 10" Putnam, taper attach.
Lathe, 36" x 64" Bridgeford gum boring m. d.
Lathe, 54" x 24" H. S. & G., q. c. g., m. d.
Miller, vertical "C" Becker, s. p. d.
Miller, vert. No. 4-B Becker, for m. d.

Miller, No. 3-Bhv. B. & S. pl. s. p. d.
Miller, No. 3-B Milwaukee, s. p. d.
Miller, pl. No. 2 Cincinnati, cone.
Millers, pl. 2-M Cin. s. p. d. (new).
Miller, No. 0 Kempsmith univ.
Miller, duplex Knight, table 84" x 32".
Motor, 2 h. p., 3/60/220-1150 & 1725 rev.
Motor, 3 h. p. 1/60/110-220/1730 rev.
Motor, 10 h. p. C.-W. 3/60/220/1200.
Motor, 1 h. p. West. 3/60/440/1200.
Motor, 15 h. p., 220 v. d. c., 300/1200 rev.
Motors, 20 & 50 h. p. 3/60/220/900.
Oil separators, 4" & 14 bu. cap.
Pipe machine, 4" Williams, m. d.
Planer, 20" x 16" x 3", 1 head.
Planer, 36" x 36" x 8" L. & D., 2-heads.
Press, No. 14 Stiles (Bliss) plain.
Press, 52 Ferracute, punch.
Press, D. G. 62, Ferracute, a. s.
Press, No. 194 Bliss, o. b. i., a. c. motor, new.
Presses, No. 87 Niagara, screw.
Punch, 30" thrt., 1" x 1" m. d., s. e.
Punch, 17" thrt., 1" x 1" A. J., m. d.
Punch & shear, 17" throat 1x1"; arch jaw, m. d.
Punch & shear, 36" Cleve. e. f. a. j.
Punch and shear, s. e. 6" thrt. 1x1".
Punch, coping, steel plate, 13" thrt. 36" die space, 2 holes 1" x 1", m. d.
Radial drill, 24" Fossdick, t. a.
Radial drill, 3" Drees-Mueller.
Radial drill, 3" Cin-Bickford, g. b. m. d.
Riveter, Allen jaw, 36" cap. 14".
Riveter, 1" Shuster rotary, belt.
Rolling mills, Nos. 3 & 4 Buffalo.
Saw, Burke, 12" blade, capacity.
Saw table, No. 260 F. & E., (wood).
Screw mach., 10" P. & W. pl., w. f.
Shaper, 7" Rhodes, vise.
Shaper, 6" Pratt & Whitney.
Shaper, 14" Springfield, crank.
Shaper, 16" Am., b. g., crank.
Shaper, 26" Smith & Mills, b. g., cr.
Shaper, 24" Jungst., b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Shear, rotary, 12" thrt., cap. 22 ga.
Shear, rotary bevel, Lennox 4" m. d.
Shear, squaring, 8" x 14 ga, power.
Shear, bar, Braun, cap. 1"; hand.
Turbo compres., Spencer 5400 c. f. m.
Turret lathe, 13" Gisholt, 24" h. s.
Turret lathe, 28" Gisholt, 31" h. s., t. a.
Turret lathe, 2" x 24" J. & L., s. p. d.
Turret lathe, 18" W. & S. friction hd.

USED AND REBUILT MACHINERY

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe.
Grinders, No. 10 Brown & Sharpe.
Gear cutter, 4" Waltham, (new).
Grinder, Norton 10x36.
Grinders, surface, No. 22, Heald.

Hobber, Nos. 3, 12-B & C.
Miller, No. 13-B B. & S., production.
Miller, No. 0Y Brown & Sharpe.
Miller, No. 3 Garvin duplex, 66" table feed (new).
Radial, 4' American sensitive.

Partial list; send us your inquiries.

FOR SALE BY

Rosenfeld Machinery Co., 942-944 W. Lake St., Chicago, Ill.

Broaching machine, No. 2 LaPointe (New London), with broaches.
Grinder, No. 10 Besly disc.
Milling machine, No. 2 Cincinnati universal, complete.
Milling machine, 1B Milwaukee, single pulley drive with vise.
Miller, Becker vertical, Model CS, rotary table.
Motors, $\frac{1}{2}$ h. p. to 100 h. p., a. c. and d. c.
Punch press, 1-4P style, solid back.
Vises, 160 new Rock Island, all sizes.

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

SHEARS.

12"x14 ga. Loy & Nawrath.
50"x $\frac{1}{2}$ " Bertsch, 15" throat.

Canton alligator, cap. 1 $\frac{1}{2}$ " sq.
36"x18" gap, foot, Niagara.

MISCELLANEOUS.

Automatic, No. 24 New Britain.
Band saw, 24" woodworking.
Drill, multiple-spindle Bausch, No. 3 Morse taper.
Drill, 14" Allen, ball bearing.

Press, No. 6 Niagara.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Upsetter, 3 $\frac{1}{2}$ " Acme.

FOR SALE BY

Bennett Machinery Co.,

30 Church St., New York City

Boring mill, 51" Bridgeport, 2 hds.
Boring mill, 42" Bullard, 2 hds.
Boring mche., 2 $\frac{1}{2}$ " Fitch., knee type
Drill, mult. 6-sp. Bausch, in circle.
Drill press, 25" Snyder, tapping.
Drills, 24" Prentice; 20" Hofer.
Hammers, 50 lb. & 25 lb. power trip.
Lathe, 26/48"x18" McCabe, dbl. spdl.
Lathe, 26/48"x14" McCabe, dbl. sp.
Lathe, 28"x12" Boye & E., q.c., taper.
Lathe, 26"x14" Rahn-Carpenter cone.
Lathe, 24/23"x14" Pond, belt.
Lathe, 20"x8" Whitcomb-B., q. c. g.
Lathe, 21"x10" Sidney, new.
Lathe, 19"x8" LeBlond, q.c.g., taper.
Lathe, 18"x10" Sidney, new.
Lathe, 18"x10" L. & S. q. c. g., taper.
Lathe, 18"x10" Flather, q. c. g., cone.
Lathe, 16"x8" Bradford, q.c.g., taper.
Miller, No. 3 Kempamith plain.

Miller, No. 2 $\frac{1}{2}$ LeBlond, plain.
Miller, No. 1-A Milwaukee mig., grd.
Miller, Model C Becker, vertical.
Miller, No. 5B Becker.
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe machine, 6" Oster, belt.
Pipe machine, 4" E. C. & B., belt.
Pipe mche., 4" Curtis & Curtis, mtr.
Pipe machine, 3" Jarecki No. 7B.
Planer, 30"x30"x10" Cincinnati, 2hds.
Punch, 24" L. & A. No. 4 s. e.
Radial 3 $\frac{1}{2}$ " Mueller, gear box tap.
Radial, 2 $\frac{1}{2}$ " Mueller, cone dr., tap.
Radial sensitive, 3" American, tap.
Saw, cold 22" blade Gleim, 6" cap.
Shaper, 21" American, belt drive.
Shaper, 16" Stockbridge, belt.
Yale Triblock chain hoist, 20 h. p., d. c. motor, 480-1800 r. p. m.

Send for Complete Stock List.

USED AND REBUILT MACHINERY

FOR SALE BY

McMullen Machinery Company,

Grand Rapids, Mich.

Automatics, 4" Cleveland, (2).
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.
Grinder, Wisconsin universal.

Lathe, 24x26 Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville d. a.
Press, No. 54 Consolidated.
Welders, No. 10 Thomson, butt.

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

BORING MILLS.

51" Bullard vertical boring and turning mills (2).

DRILLS.

5' Prentice radial.
2-spindle Avey h. s., b. b.
28" Snyder sliding head.

26" W. F. & John Barnes sliding head.
No. 1 Langelier h. s., b. b. bench.

GEAR CUTTERS.

No. 3 Brown & Sharpe, 26"x8".
No. 3 Brown & Sharpe, 36"x8".

No. 2 Bilton automatic gear millers.

GRINDERS.

10"x120" Norton plain cylindrical.
No. 12 B. & S. pl., cyl., 8x36.
No. 11 B. & S. plain, cyl., 4x20.
No. 2 B. & S., surface.
No. 1 B. & S., surface.
No. 1 Norton, tool and cutter.

Nos. 2 & 3 B. & S. cutter & reamer.
20" Diamond standard.
14" Blount wet tool.
Heald twist drill.
Blake & Johnson surface.

LATHES.

30"x20' Fitchburg.
22"x26' Lodge & Shipley, g. h.
24"x16' LeBlond.
21"x 8' Prentice.

16"x 6' Pratt & Whitney.
12"x 5' Reed, taper.
12"x 5' Vernon, c. q. g.

MILLING MACHINES.

No. 4-A Brown & Sharpe universal.
No. 14 Brown & Sharpe universal.
No. 4-B heavy B. & S. plain, m. d.
No. 3-G. H. LeBlond plain, s. p. d.
No. 2-B heavy B. & S. plain, s. p. d.
Newton slab 28"x28"x13'.

Ingersoll adjustable rail 34"x24"x12', m. d.
No. 4 Van Norman duplex.
No. 2 Brown & Sharpe vertical.
3-H Becker vertical profiler.
Whitney hand.

PLANERS AND SHAPERS

54"x42"x12' Gray, 3 heads.
48"x48"x16' Niles-Bement-P., 2 hds.
36"x36"x10' Woodward, heavy duty, m. d., 3 heads.
32"x32"x 8' Powell.

17"x20"x 4' Whitcomb.
24" Potter & Johnston shaper.
15" Potter & Johnston shaper.
Boynton & Plummer shaper.

POWER & FOOT PRESSES.

No. 5 Manville s. a., p. p. roll feed.
No. 4 Manville s. a., p. p., ratchet dial feed.
No. 2-A Standard s. a.
No. 6 Manville.

No. 1 Bliss d. a. cam.
No. 1 Standard broaching and drawing, 7".
No. 68 Bliss d. a. cam.
Bosworth foot presses, new (6).

SCREW MACHINES.

No. 2-G Brown & Sharpe automatic.
No. 3 Warner & Swasey, g. f. h.
3"x38" Jones & Lamson, flat turret.

14"x18" Pratt & Whitney, b. g.
No. 0 Brown & Sharpe, plain wire feed.

MISCELLANEOUS.

Band saw, 12" H. & R. metal cutting
Band saw 36" H. B. Smith, wood wk.
Cutting-off machine, 3" H. & R. a.s.
Filing machine, Thurston.
Hammer, 50 lbs. Standard auto. drop.
Hammer, 125 lbs. Dupont power.
Hammer, 200 lbs. Beaudry champion.

Rolling mill, 12"x20" toggle.
Shaft straightener, Rock'd 54"x10'.
Universal wood worker, No. 56 Crescent.
Winding machines, Universal Winding Co's No. 97 with paper chute and feed mechanism.

USED AND REBUILT MACHINERY

FOR SALE BY

J. Bleser Mfg. Co.,

16th & Madison Sts., Springfield, Illinois

Grinders, Landis No. 1½ & 2 univ.
 Lathe, Lodge & S. 36"x18', q. c.
 Lathe, Prentiss 25"x16', s. c. g.
 Lathe, engine, 16"x8' G. & K., q. c.
 Lathe, 14"x6' Monarch, q. c.

Miller, No. 3 univ., O. type.
 Millers, No. 3 Burke, Rockford.
 Punch press, No. 3-A Walsh arch.
 Screw machine, No. 4 Warner & S.
 Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Carlson Machinery Co., Inc.,

Davenport, Iowa

Boring mill, No. 2 Rockford horiz.
 Boring mill, No. 3-A universal hor.
 Centering machine, 4" Pratt & W.
 Drill, ½" Sipp h.s.b.b., 8" overhang.
 Grinder, 10x20 Landis universal.
 Grinder, No. 2 Oakley univ., t. & c.
 Hobber, 24" Schuchardt & Schutte.
 Lathe, 7"x30" Dalton bench.
 Lathe, 13"x5" Sheppard.
 Lathe, 14"x6" Hendey, geared head,
 taper, draw in attach. & collets.
 Lathe, 16"x8" Canedy-Otto.
 Miller, No. 1 Cincinnati plain.

Miller, No. 1 Kempnith univ., div.
 head.
 Miller, No. 2-B B. & S. pl., s. p. d.
 Miller, No. 2 Ohio plain.
 Miller, No. 6 Whitney hand.
 Press, No. 4 Toledo o. b. i.
 Press, No. 5 Toledo o. b. i.
 Riveter, ½" Cincinnati spinning.
 Turret lathe No. 1 Pratt & W.
 Turret lathe, 3x36 Jones & Lamson.
 Turret lathe, No. 4 W. & S. pl.
 Turret lathe, No. 6 Warner & S.,
 power feed to carriage and turret.

FOR SALE BY

Randle Machinery Co.,

1733 Powers St., Cincinnati, Ohio

Bending roll, 5' Beloit.
 Bending rolls, 8' x 5/16" Bertsch.
 Bending rolls, 10' x ½" plate.
 Bolt cutters, 1½", 2" Acme.
 Bolt cutters, 1½", 2" Landis.
 Bolt cutter, 4" Acme, m. d.
 Boring mill, 36" Bullard, r. p.
 Boring mill, 60" Niles spdl. type.
 Boring mill, 73" Gisholt.
 Boring mill, 10" Pond.
 Brake, 8' x 16 ga. Robinson hand, pwr.
 Brake, 8' x 16 ga. Robinson, m. d.
 Brake, 12' x 14 ga. Chicago, m. d.
 Brake, No. 3-B Chicago.
 Grinder, No. 7 Gardner.
 Grinder, No. 24 Gardner.
 Grinder, No. 4 Gardner.
 Grinder, No. 41 Besly, m. d.
 Hack saw, 6x6, and 12x16 Peerless.
 Hack saw, 9x9 Acme.
 Keyseater, No. 2 Davis.
 Keyseater, No. 2 Mitts & Merrill.
 Keyseater, No. 3½ Baker.
 Keyseater, No. 4 Catlin.
 Lathe, 14"x6" LeBlond, q. c.
 Lathe, 16"x8" LeBlond, q. c.
 Lathe, 16"x6" Rahn-Larmon.
 Lathe, 16"x6" new Monarch, q. c.
 Lathe, 18"x10" LeBlond, q. c.
 Lathe, 18"x6" American grd. hd.
 Lathe, 17"x16" Sidney q. c.
 Lathe, 20"x10" American, grd. hd.
 Lathe, 24"x10" Lodge-Shipley q. c.
 Lathe, 24"x10" LeBlond, q. c.
 Lathe, 27"x12" LeBlond, q. c.

Lathe, 36"x12" Schumacher-B., l. c.
 Lathe, 25"x14" Sidney, q. c.
 Lathe, 32"x18" American, q. c.
 Lathe, 36"x18" American, q. c.
 Lathe, 42"x24" Bradford t. g., l. c.
 Lathe, 60" New Haven, l. c.
 Miller, No. 2 LeBlond plain.
 Miller, No. 25 Ohio plain.
 Miller, No. 3H LeBlond plain.
 Miller, No. 2 Cincinnati universal.
 Miller, No. 2 Kempnith universal.
 Planer, 26"x26"x12" W.-B., 2 heads.
 Planer, 30"x30"x16" American, 2 hds.
 Planer, 32"x32"x16" Gray, 2 heads.
 Pipe machine, 2", 6" Saunders, b. d.
 Pipe machine, 8" E.-C.-B., belt dr
 Pipe machine, 8" Landis, m. d.
 Radial drill, 3" Mueller.
 Radial drill, 4" Dresser plain.
 Radial, drill 4" Bickford plain.
 Radial drill, 5" Cin-B. univ., m. d.
 Shear, No. 51 Beloit combination.
 Shear, No. 262 Robinson.
 Shear, No. 196 Niagara.
 Shear, Nos. 1½, 2 D. & K. Alligator.
 Shaper, 14", 18" Steptoe plain.
 Shaper, 16" Cincinnati, b. g.
 Shaper, 16" new Queen City b. g.
 Shaper, 20" Queen City, b. g.
 Shaper, 24" Barker, b. g.
 Shaper, 28" Queen City s. p.
 Wheel presses, 200 ton N.-B.-P.,
 200 ton Caldwell; 300 ton Thomas;
 400 ton Caldwell.

Also many other tools. Send us your inquiry.

USED AND REBUILT MACHINERY

FOR SALE BY

Nelson Machinery Co.,

123 N. Pearl St., Green Bay, Wis.

Brake, 8' Keene, 16 gauge capacity, hand bending.
Drill press, 4-spindle Henry & Wright, ball bearing.
Filing machine, Noble & Westbrook on pedestal.
Grinder, No. 14 Besly double disc.
Hobber, Adams-F. No. 1 auto. gear.
Miller, No. 3 Cinti univ., cone dr.

Punch press, No. 4 R. & K., o.b.i., flywheel.
Punch press, No. 3 Bliss, o.b.i. flywheel.
Riveter, No. 1 1/2 High Speed, 1/2" cap.
Shaper, 16" G. & E. crank, cone dr.
Shaper, 24" Kelley crank, cone dr.
Squaring shrs., 8' Bertsch, 16 gauge capacity, foot power.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

HAMMERS.

No. 5-B 500-lb. Nazel motor-driven.
2000 lb. Niles steam.

60 lb. Bradley helve.

LATHES.

60"x12' New Haven turning lathe.
26"x12' Fifield, heavy pattern.
26"x12' Wickes, taper attachment.
24"x10' LeBlond, p. c. g.
20"x16' Monarch gap lathe.

18"x 8' LeBlond, q. c. g.
18"x 8' American, geared head.
15"x10' Cisco, q. c. g.
14"x 6' Flather, q. c. g.
Fitchburg Lo-Swing, 12' bed.

PLANERS AND SHAPERS.

24"x24"x 6' Powell.
30"x30"x 8' Cincinnati.
36"x36"x18' Hamilton, motor drive.
42"x42"x12' Powell, 3 heads.
36"x36"x12' Cleveland openside.
48"x48"x16' Niles, box table.

16" Whipp shaper.
20" Smith & Mills, shaper, b. g.
24" Cincinnati shaper, b. g.
24" Flather shaper, b. g.
24" Gould & Eberhardt shaper, b. g.

MILLERS.

No. 1 U. S. hand miller.
Hendey, Lincoln type.
No. 7 Becker, Lincoln type.

No. 1 1/2 Brown & Sharpe plain.
No. 1 1/2 Rockford plain.
36"x36"x8' Ingersoll slab.

DRILLING MACHINES.

4-spindle Barr, power feed.
4' Dreses radial.
4' Cincinnati Bickford.
5' Western radial.

32" Mechanics drill.
22" W. F. & John Barnes.
20" Champion.

GRINDERS.

10"x10" Sterling universal.
14"x36" Landis universal.
8" Heald rotary, magnetic chuck.

No. 50 Gardner disc, 30" capacity.
No. 6 Besly double disc.

BORING MILLS.

No. 1 P. & H. horizontal drill.
No. 3 Niles horizontal borer.

42" Niles, 2 heads.
51" Baush, 2 heads, heavy.

SCREW AND TURRET MACHINES.

3"x24" J. & L., geared head.
No. 1 Pratt & Whitney screw mche.
No. 6 Warner & Swasey cone head.

3"x36" J. & L., geared head.
2" Warner & Swasey hollow hex.

TRAVELING CRANES.

15 Hand, cranes 14' to 42' span.

3 yard jib cranes with guy ropes.

MISCELLANEOUS.

Forging mch., 2 1/2" Acme, steel bed.
Forging mch., 1 1/2" Acme, steel bed.
Furnaces, cyanide hardening.
Pipe machine, 12" Bignall & Keeler.
Presses, Lourie hydraulic, 20 & 30 ton
Punch, horizontal, 1" in 1".
Punch & shear, Cleveland 42" throat.

Rotary planer, 44" and 48".
Sand sling, Beardsley & Piper,
No. 18, type P.
Shear, Lennox, rotary bevel.
Slotter, 13" Niles.
Swagger, No. 1 Dayton.

USED AND REBUILT MACHINERY

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Boring mill, No. 18 Beaman Smith horizontal, floor type, 34" bar.
Boring mill, 48" Bement car wheel.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Drill, 32" Aurora, motor driven.
Drill, radial 24" Morris s. p. dr.
Gear cutter 30" Whiton, belt.
Grinder, 14"x36" Norton plain, belt.
Grinder, disc No. 8-30" Badger ball bearing.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 1100 lb. N. B. P., sgl. fr.
Hammer, 600 lb. Bement sgl. frame.
Hammer, 300 lb. N. B. P. sgl. frame.
Lathe, 30"x26" Lodge & S., belt, q. c. g.
Lathe, 30"x30" Harrington.
Lathe, 38"x20" Sidney, q. c. g.
Lathe, 48"x12" Harrington, belt.

Miller, No. 4 Cincinnati, vertical, mtr. dr.
Milling mche., No. 3 Garvin duplex.
Pipe machines, 2" 4", 6", 8" & 12"
Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Pipe machine, 2" Landis, belt.
Planer, 36"x36"x24", Bement, 4 hds.
Planer, 54"x54"x16" Pond, motor drive, 4 heads.
Planer, 54"x54"x30" Sellers, 4 heads.
Press, No. 734 Bliss trimming press.
Press, No. 37 Niagara, 1100 lb. fly-wheel, solid back.
Shaper, 18" Cincinnati, one traveling head, 2 tables.
Shapers, 20" Stockbridge, with speed box, (2).
Shaper, 24" Averbeck, s. p. drive.
Shear, Buffalo bar, cap. 2" round.

FOR SALE BY

Scott-Bansbach Machinery Co.,

130 So. Clinton St., Chicago, Ill.

Auto. screw mach., B. & S. No. 19, h. s. (3) each	\$ 500.
Auto. screw mach., B. & S. No. 00, with slotting	450.
Auto. screw mach., B. & S. No. 00, without slotting	400.
Auto. screw mach., B. & S. No. 0, without slotting	500.
Auto. screw mach., Cincinnati, 5-spindle, 1"	900.
Auto. screw mach., Cleveland, 1", Model A	150.
Bolt cutter, 2" D. & H., double head	300.
Boring mill, Morris horiz., motor drive, 1 15/16" spindle	1,000.
Boring mill, 34" Colburn vertical	350.
Brake, No. 18 gauge 5" Robinson	85.
Centering machine, Whiton swivel	75.
Drill, 1-spindle L-G 14", high speed, ball bearing	175.
Drill, 4-spindle Avey, high speed, ball bearing	350.
Drill, 4-spindle Allen, high speed, ball bearing	350.
Drill, radial, 3" American sensitive	200.
Filling machine, Cochran-Bly, floor type	100.
Grinder, No. 1 Norton universal, cutter and tool, all att.	500.
Grinder, No. 65 Heald, with fixtures, b. b. spindle	900.
Hammer, 50 lbs., No. 1 Standard drop	150.
Lathes, 18x18 Hendey, quick change, with taper	500.
Lathe, 20x12 Schumacher & Boye, quick change with chuck	500.
Lathe, 20x12 Kahn-Larmon, quick change with chuck	350.
Lathe, 20x10 Bradford, with chuck	400.
Miller, No. 4-B Becker vertical, 8350, with rotary table	425.
Miller, No. 3H LeBlond heavy duty, full universal	1,250.
Miller, Whitney, Standard and U. S., hand	125.
Miller, No. 12 Pratt & Whitney automatic	600.
Miller, Ingersoll slab, 42"x36"x9"	1,750.
Oil separator, Curtis 1 bu.	100.
Planer, 32x32x8 Pond, 1 head	750.
Planer, 36x36x8 Cincinnati, 2 heads	1,250.
Press, No. 21 Holden o. b. i., 3700 lbs., 24" stroke	350.
Press, No. 3 Robinson o. b. i., 4300 lbs., 2" stroke	450.
Press, No. 3 R. & K. o. b. i., 5500 lbs., 2" stroke	525.
Screw machine, No. 1 W. & S., complete, (6) each	125.
Screw machine, P. & W. 1/4"x1, complete	150.
Shaper, 7" Rhodes horizontal	150.
Turret lathe, 24" Steinlee, 54" hole, side carriage	700.

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor Mfg. Co., Inc., 35 Albany St., Cambridge, Mass.

Automatics, Cleveland 11" 3 hole turret, (2) each	100.
Automatic, Cleveland, 21" 3 hole turret	100.
Automatic, Cleveland, 3" 6 hole turret	100.
Grinder, 6x18 Landis No. 11466	400.
Grinder, 6x32 Norton	350.
Grinders, Nos. 60 Heald cylinder, Nos. 344 and 349, (2) each	250.
Grinder, No. 75 Heald	100.
Grinder, small tool	45.
Saw, 11", table 27x33", countershaft built-in, tight and loose pulleys, dust guard, mitre cutting attachment	60.

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS, VERTICAL.

14"-30" Betts, extension type.	42" Bullard, turret head.
60" Bullard, single pulley drive.	52" Niles-B.-P. turret & plain head.
48" Gisholt, rapid traverse.	

BORING MILLS HORIZONTAL.

5" bar Newark, knee type.	44" bar Niles-B.-P., floor type.
5" bar Beamen & Smith floor type.	3" bar Lucas single pulley drive.
No. 1 Betts 3" bar, knee type.	3" bar Betts, knee type.
5" bar Deitrich & Harvey, floor type.	

MILLING MACHINES.

No. 2-B heavy Brown & Sharpe.	No. 2A Hendy-Norton univ.
No. 3 Cincinnati plain, high power.	No. 4 Cincinnati, vertical.

DRILLS.

24" Mueller, speed box.	24" Aurora sliding head.
5" Niles B. P., semi-universal radial, speed box drive, tilting table.	26" Prentice sliding head.
No. 25 Foote-Burt, heavy duty.	2-spindle Avey, h. s.

GRINDERS.

No. 12 Brown & Sharpe plain.	54" Diamond surface.
10"x36" Norton plain.	

LATHES.

54"x24" H. S. and M. quick change.	19"x8' LeBlond, heavy duty.
48"x18" Fifeeld t. g.	18"x18" Reed, belt drive.
36"x16" N. B. P., motor drive.	18"x8" Fairbanks, double b. g.
30"x16" N. B. P., motor drive, d. c.	16"x8" Hendey.
24"x12" Reed-Prentice, g. h.	16"x8" Putnam, rebuilt.
22"x14" LeBlond, heavy duty.	16"x8" Pratt & Whitney, g. h.
22"x12" Niles oil country.	

TURRET LATHES.

No. 3A Warner & S. chuck equip.	No. 4 Warner & Swasey with equip.
No. 2 Foster, screw machine.	No. 1 B. & O. Fox monitor.

PLANERS.

96"x72"x24" D. & H. openside.	42"x42"x30" new Niles-Bement-Pond.
72"x72"x18" Pond, rev. motor drive.	42"x42"x26" N. B. P., rev. m. d.
60"x48"x14" Cincinnati, gr. box, m. d.	30"x30"x16" Gray, 3 heads.
48"x48"x14" Patch, 4 heads, b. d.	22"x32"x4" Whitcomb, 1 head.

MISCELLANEOUS.

Bending rolls, 12' Niles, 1/2 cap.	Hammer, No. 400 Bliss board drop.
Buffing jacks and wheels.	Hydraulic forging press, 1200 tons.
Chain blocks, 1-ton with trolleys.	Pipe machine, Saunders 6".
Core wire straightener, 1/2" to 5/16".	Planer drive, 20 h. p., 230 v., d. c.
Elevator, portable, 3'x4'x18".	Pumps, steam, 6x12x6 brass.
Furnaces, Strong, Carlisle & H.	Pumps, steam, 8x12x12 brass.
Gear cutter, No. 4-36" B. & S. auto.	Riveter, Allen pinch type.
Gear cutter, No. 2 Bilton.	Sand sling for large foundry.
Generator, 160 k. w., a. c. Deisel.	Saw, Klem No. 1 band saw.
Hammer, steam, 400 lb. Chambersb.	Time clocks, shop (12).

USED AND REBUILT MACHINERY

FOR SALE BY

Brown Machinery Co.,

Blowers, Nos. 3, 7 and 9 Sturtevant;
Nos. 1 and 2 Root.
Buffer, Hisey 3 hp. 3-ph., 230 v.
Drills, 20" C-O and Champion; 22"
and 25" Barnes; 24" Cincinnati.
Drills, radial, 24" American 34"
Fosdick.
Drills, hor. radial Nos. 2 & 3 Barnes.
Grinders, emery, St. Louis & W.;
large stock new at 50% disc.
Grinders, disc, No. 6 Bealy and 14
Gardner.
Grinders, drill, W. & M., American.
Grinders, plain, 10x36" Norton;
6x36" B. & S.
Grinders, universal, Nos. 3 Ohio
and 12 B. & S.
Hammer, helve, 40 lb. Bradley.
Lathes, turret, 16" Gisholt, Fulton,
Omar, Foster, J. & L.

And many others. Write for list 130.

2323 N. 9th St., St. Louis, Mo.

Lathes, No. 5A Potter & Johnston.
Lathes, 14" C-J; 16" Monarch; 18"
Monarch; Lodge & Shipley; Fay
& Scott; 20" L. & S.; 24" F. & S.;
26" Whitcomb-B.; 36" American.
Millers, No. 4 Hendey and No. 3B
Owen, plain; No. 3 Cincinnati univ.
Pipe machine, No. 2 B. & K.
Planers, 30" Whitcomb; 60" Niles,
42" Pond.
Presses, No. 5 S. & P. grd.; L. & J.
o. b. l., No. 2 S. & P.
Punch and shears, No. 6 L. & A.
12" thrt.; No. 17 W.-W.
Riveter, 4" Adt.
Shapers, 14" Barker; 20" D. & E.
Shears, rotary splitting, No. 134
Marshalltown 4" thrt.; 4" cap;
No. 13 Pettingell.

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air comp., 10x10" Laidlaw, 275 cu. ft.
Air comp., 8x8" Ing. Rand, 96 cu. ft.
Bolt cutters, 14", 2", 24", 4" Landis.
Boring mills, 30" to 16".
Brake, 10" 6" Ohl, 10 ga., press type.
Bulldozer, No. 25 W. & W.
Drills, 14" to 38".
Drill, mult., No. 5 Fox, 10-spindles.
Drill, radial, 6" Prentice, s. p. d.
Flanger, McCabe, 4" capacity.
Gear cutters, spur and bevel.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel.
Grinder, dbl., 12"x14", mtr., 220., ac.
Grinder, 12"x96" Norton, b. d.
Grinder, disc, No. 52 Bealy.
Grinder, planer type, 51" Springfield.
Grinder, No. 22 Heald surf., 12" chk.
Grinder, No. 16 Blanchard.
Hammer, 75 lb. Bradley upr. helve.
Hammer, 100 lb. Bradley, upright.
Hammer, 300 lb. Beaudry, upright.
Hammers, 3-B, 3-B & 4-B Nazel.
Hammers, steam 600 lb. to 3000 lb.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, turret, 26" Libby.
Miller, plain, No. 3-B Brown & S.
Miller, univ. No. 2 Hendey, s. p. d.
Miller, univ. No. 3 Brown & S.
Miller, slab, 24"x20"x14" Ingersoll.
Pipe machines, 24" to 12".
Planer, 36"x36"x16" N-B. -P. like new.
Planer, 42"x42"x12" Cincinnati, 2 hds.
Planer, 96"x96"x30" Pond, 4 hds., m.d.
Planer, 42"x42"x12" Detrick & H.o.s.

Planer, rotary, 48" Newton.
Press, geared, No. 34 Toledo.
Press, No. 374 Bliss, s. a., 6" stroke.
Press, toggle, No. 165 Toledo.
Press, wheel, 600-ton Caldwell.
Punch, hor., Cleveland, 1" thru 1".
Punch & s., L. & A. 30" thr., 14" thru 1".
Riveter Hanna, 15" thrt., 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolling mill, 18" Standard.
Rolls, bending, 10"x8" Wickes.
Rolls, straight ng, 36"x16 ga., 17 r.
Saw, cold, 24" Hunter high speed.
Shaper, 16" Smith & Mills, b. d.
Shaper, 24" Stockbridge, b. d.
Shear, angle, L. & A., 6"x6"x4"
Shear, alligator, Lewis 14" square.
Shear, alligator, No. 5 Canton, 3" sq.
Shear, alligator, United, 5"x5".
Shear, bevel, Lennox 4".
Shear, guil. No. 0 H. & J., 14" round.
Shear, plate, 10"x4" Berisch, 15" thrt.
Shear, plate 10"x4" Morgan, 24" gap.
Shear, rotary, No. 3 Quickwork 4".
Shear, rotary, No. 6 Quickwork 4".
Shear, squa. 12"x14 ga. Peerless.
Shear, sq., 10"x3/16" W. & R., m. d.
Shear, squar. 42"x3/16" Canton, b. d.
Shear, squar. 52"x16 ga. Niagara.
Straightener, bar, No. 4-D K. & R.
Straightener, beam, No. 4 H. & J.
Swaging machine, 1" Langelier.
Testing machine, 100,000 lbs.
Welder, Gibb spot, 4", 32" thrt.
Upsitters, 14" to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

Allegheny Gear Co.,

1013 Empire Bldg., Pittsburgh, Pa.

Broaching mche., No. 3 LaPointe.
Drill, 2-D Colburn, 24" swing 2 1/2".
Drill, radial, Reed-Prentice, arm 5".
Gear cutter, No. 3A Cincinnati.
Gear shaper, "Fellows" No. 62.
Gear gents bevel, Gleason 11" & 15".

Grinder, No. 20 Bryant, deep hole.
Grinder, Landis 12"x66" plain whls.
Grinder, No. 70 Heald internal.
Hoists, portable, crane, 2-ton.
Lathe, 32"x14" Bridgeford, motor dr.
Planer, Bickett 36"x36"x12", mtr. dr.

FOR SALE BY

Miles Machinery Co.,

Saginaw, W. S., Mich.

Automatics, Nos. 22, 24 New Britain.
Automatics, 1, 1 1/2 and 2 1/2 Gridley.
Bulldozer, No. 4 Williams & W.
Compressor, 741 Chicago, type OCB.
Drills, radial, 4, 5, 6 & 8' Western.
Gear hobber, No. 12 Barber-Colman.
Gear hoppers, 12", 18" & 24"G. & E.
Grinder, face, 24" Diamond.
Grinder, internal, No. 70 Heald.
Keyseater, 2", No. 2 Baker.
Lathe, 36"x18" Schumacher & Boye.
Lathes, 12"x6" and 14"x8" Hendey.
Lathes, turret, 24" & 36" Bullard.

Lathes, turret, Nos. 2, 4 & 6 W. & S.
Mill, boring, 96" Betts.
Mill, hor., 3", No. 1 Lucas.
Mill, horiz., 6" bar Gray.
Millers, Nos. 2 & 3 Cincinnati.
Millers, univ. Nos. 2 & 3 B. & S.
Millers, vert. Nos. 5C & 6 Becker.
Planer, 30"x30"x10" Cleveland.
Planer, 56"x42"x12" Cincinnati.
Presses, Nos. 65 & 66 Consolidated.
Shaper, 24" Gould & Eberhardt.
Upsetters, 1", 1 1/2", 2" & 3" Ajax.
Welder, spot, 47 k. v. a. Taylor.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

No. 2B Kearney & Trecker univ.
No. 3 Brown & Sharpe universal.
No. 3 Kempsmith universal.
No. 2 1/2 Rockford univ., agl. pulley.
No. 2 Rockford universal.
No. 2 Rockford plain, single pulley.

No. 2B plain B. & S. motor attach.
No. 3 Becker vertical.
Beamman & Smith vert. and horiz.
30" Bullard vertical turret.
2 1/2" Binnse horizontal, boring.
Large variety of smaller millers.

RADIALS AND DRILL PRESSES.

4' Cincinnati-Bickford agl. pulley.
3' Cincinnati-Bickford.
1, 2, 4-sp. Leland-Gifford hi-sp. (10).

1, 2-spindle Avey Nos. 0, 1, 2 (6).
2-spindle Cleveland, tap. att.
Large variety plain drills, 12"-26".

PLANERS AND SHAPERS

30"x30"x8" American, 2 hds. on rail.
24" Rockford geared crank.
20" Gould & Eberhardt grd. crank.
20" Queen City geared crank.
20" Smith & Mills geared crank.
17" Smith & Mills crank (2).

17" Flather crank, t. & l. pulleys (2).
16" Rockford crank.
16" Steptoe crank.
14" Smith & Mills crank.
12" Smith & Mills crank.
12" Steptoe crank.

SCREW MACHINES AND TURRET LATHES.

No. 4 Warner & Swasey universal.
No. 4 W. & S., b. g., friction hd. (4).
No. 4 Warner & Swasey plain.
No. 2 Warner & Swasey (4).
No. 1 Warner & Swasey.
No. 0 Brown & Sharpe automatic.
No. 00 Brown & Sharpe auto. (5).

No. 2, 1, 0 B. & S. formers (12).
No. 2 Brown & Sharpe semi-auto.
No. 0 Brown & Sharpe semi-auto.
Large variety Fosters, Acme, V. O.
No. 53 Nat-Acme, motor, att. (5).
4", 4" Cleveland (5).
5-spindle New Britain screw mche.

ROLL CUTTERS AND KEYSEATERS.

2" Acme with lead screws (2).
1 1/2" Landis.
1 1/2" Landis.
1 1/2" Acme.
1 1/2" Acme.

4" Acme.
No. 5 Becker keyseater.
No. 3 Becker keyseater.
No. 2 Davis keyseater, (3).
Variety of cutters and broaches.

Large stock of lathes, punch presses, plain and universal grinders, 2 1/2", 4" 3",
8", 10" power squaring shears, tappers, several hundred Warner & Swasey,
etc., box, boring tools, etc.

USED AND REBUILT MACHINERY

FOR SALE BY

E. L. Kleuber Machinery Co., 320 South Third St., St. Louis, Mo.

Drill, 28" Prentice, b. g., p. f., sl. hd.
 Drill, radial, 42" Bickford.
 Drills, 3-spindle Dwight slate.
 Drill press, 34" Barnes, b. g., s. h. t. a.
 Drill press, 26" Hosfer b. g., t. a.
 Gear cutter, 32" Whiton.
 Gear hobber, No. 0 Schuchardt & S.
 Gear miller, automatic, 4" cap.
 Grinders, No. 11 B. & S. plain (2).
 Grinder, No. 3 Brown & S. cutter.
 Grinders, electric bench, 1/2 h. p. 110
 volt a. c.
 Lathe, bench, Stark, with collets.
 Lathes, 9x14 Porter-Cable.
 Lathes, 14x6 Davis tool room.
 Lathe, 13x6 South Bend.

Lathe, 15x6 South Bend.
 Lathe, 16x6 Prentice p. c. g., a. b. g.
 Lathe, 22x14 Bradford, q. c. g., d. b. g.
 Miller, No. 1 1/2 Knight.
 Millers, hand, No. 0 Burke.
 Pinion and wheel cutter, Stark.
 Planer, 30"x30"x5' American.
 Screw mche, Cleveland auto. 1/2" cap.
 Shaper, 14" Steptoe.
 Shaper, 24" American, b. g.
 Shapers, 24" Cincinnati, b. g. (2).
 Shear, serpentine, Lenox 4".
 Tapping machine, No. 6 St. Louis.
 Tapping mche, Montgomery frict.
 Turret lathe, Wood tilted, auto.
 chucks up 1 1/2"

FOR SALE BY

Fitchburg Grinding Machine Corporation, Fitchburg, Mass.

LATHES.

LeBlond 14"x6'.
 Reed-Prentice 16"x5'.
 Putnam 14"x6'.

Greaves-Klusman 18"x8'.
 Perkins threading 21"x10'.
 New Haven 32"x12'.

PLANERS.

42"x36"x22' Whitcomb.
 32"x36"x16' Whitcomb, 2 heads.
 22"x22"x6' Whitcomb.

17"x20"x8' Whitcomb.
 30"x30"x5' Powell, 2 heads.

TURRET LATHES.

2 1/2x24" J. & L., chuck equipment.
 3x36" J. & L., chuck equipment,
 double spindle.

2 1/2x26" Greenlee.
 16" Reed Prentice.
 21" Gisholt.

MILLERS.

No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.

24" Reed-Prentice.

RADIAL DRILL.

2 1/2" Dreses.

FOR SALE BY

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Guaranteed NEW MACHINES in original crates at prices below list:

Cut-off mchs., No. 3 Modern (2).
 Drill, No. 38 Demco, with power
 feed.

Pipe machine, No. 70 Forbes.
 Shaper, 20" Whipp, back geared.
 Straightener, No. 2 1/2 Corey.

Exceptional values in USED TOOLS:

Band saw, 30" Fox, tilting table.
 Bending machine, Champion.
 Drill, Avey No. 3, 3-spindle, 15"
 overhang, motor drive, with pump
 and piping.
 Drill press, 22" Prentice, rebuilt.
 Grinder, 24" Safety Emery Wheel
 Co. snag grinder.
 Grinder, Blount 1 1/2x14 wet tool, m. d.
 Lathe, 20"x12' Reed.
 Lathe, 12"x1' Hendey, q. c. g.
 Lathe, 8x60 Fitchburg lo-swing.
 Miller, No. 5 Becker vertical.
 Millers, Wisconsin hand, (3).

Planer, 30"x30"x16' L. W. Pond.
 Radial, 5' Pond.
 Radials, 5' Dreses, single pulley
 drive, gear box, (2).
 Rip saw, No. 2 1/2 Powers, self feed,
 power.
 Screw machine, No. 2 1/2 Garvin.
 Thread miller, No. 12 Lees Bradner.
 Tilted turret, No. 6 Wood.
 Turret lathes, No. 4 Foster, (2).
 Turret lathe, No. 3 Cincinnati Acme.
 Turret lathe, 2 1/2x26 Pratt & Whitney.
 Turret lathe, 21" Gisholt.
 Turret lathe, 24" Steinle.

USED AND REBUILT MACHINERY

FOR SALE BY

United Mchry. & Supply Co.,

4640 Newberry St., St. Louis, Mo.

Drill press, 20" Barnes, camel back.
Gear hobber, No. 1 Farwell, 12".
Hack saw, No. 6 Robertson, m. d.
Hammer, No. 150 W. & W., air.
Lathe, Gisholt 6", bar stock.

Lathe, 14" Fox and attachments.
Lathe, column, 52"x18", back gear.
Rolls, 6"x4" and 6"x18 ga.
Screw mchs., Nos. 53 & 55 Nat. Acme.
Shears, angle, 6"x6" and 2"x2".

FOR SALE BY

A. M. Stoehr Machinery Co.,

803 W. Madison St., Chicago, Ill.

Bolt cutter, 3-spdl. Acme, 1" cap.
Boring mill, Lucas horizontal, 3" bar,
single pulley drive; 60" Bullard
motor drive, 220 v., 60 cy., 3 ph.
Bulldozer 75-ton Lourie hyd., m. d.
Grinders, No. 7 Gardner b. b. d. e.,
univ. tbl.; Nos. 26-18" Besly dbl.
spdl. disc. complete; Detroit center-
less, arranged for belt drive.
Miller, 70"x22" Sellers planer type,
5 heads, heavy duty.
Miller, 40" Ohio, auto. rotary.

Planers, 56x56x12' Gray, 2 heads;
60x60x18' Gray, 2 heads.
Presses & pumps, hydraulic, 300 ton
Perrin, 2-15 ton, comp. with pumps,
Presses, Bliss, arch., 2" str., 25" bet.
column; R. & K. dbl. ck., 36" bet.
column, roller feed, 2 1/2" stroke.
Punch and shears, No. 8 Whiting,
36" thrt., arct. jaw, motor drive.
Riveters, 3-A, 4-A & 5-A, high spd.
Rolls, 10" Stolle, 1/2" drop end.
Shears, Stolle rotary splitting, 1/2"
capacity; Lennox bevel 1/2" cap.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road,

N. S. Pittsburgh, Pa.

Automatics, Nos. 52 & 55 Acme.
Bolt cutter, 1/2" Acme, class "A," 2-sp.
Bolt cutter, 1/2" Geometric, m. d.
Bolt cutter, 1 1/2" Acme, double head.
Boring mill, No. 44 D. & H., floor
type, 3 1/2" bar.
Boring mill, Niles horiz., 4 1/2" bar.
Boring mill, 42" Bullard, 2 heads.
Bulldozer, No. 4 Williams & White.
Broach, No. 3 LaPointe.
Cutting-off machine, 6" Hurlburt-R.
Drill, 25" Weigel, sliding head.
Drill, 36" Snyder, sliding head.
Gear cutter, 40"x9" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, 5 h. p. U. S., 220-3-60.
Grinder, Oliver drill, 1/2" cap., m. d.
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 3 Wilmarth & M. sur.
Grinder, No. 3 Brown & S. univ.
Grinder, No. 2 Woods universal.
Grinder, No. 1 Norton univ. cutter.
Grinder, No. 2 Gardner disc, m. d.
Grinder, No. 16 Besly, double disc.
Grinder, No. 5 Springfield planer
type.
Hammer, 80 lb. Bradley cash, helve.
Hammer, 300 lb. Bradley upright.
Lathes No. 3 Hardinge Precision (3).
Lathe, 12"x 6" Seneca Falls, q. c. g.
Lathe, 12"x10" Davis tool rm., q. c. g.
Lathe, 14"-28" Fay & Scott gap.
Lathe, 16"x6" Hendey, g. h., m. d.

Lathe, 18"x8" American, late type.
Lathe, 18"x10" W.-B., g. h., s. p. d.
Lathe, 24"x12" Boye & Emmes, q. c. g.
Lathe, 30"x12" Boye & Emmes, q. c. g.
Miller, No. 0 Rockord pl., div. hd.
Miller, No. 3 Kentsmith plain, v. a.
Miller, No. 4 Hendey plain, s. p. d.
Pipe machine, 1/2" to 2" Williams.
Pipe mche., Jarecki 1 1/2" to 6", m. d.
Pipe mche., E., C. & B., 2 1/2" to 8".
Pipe machine, Merrill, 2 1/2" to 12".
Press, No. 87 Niagara screw press.
Press, No. 3 Adriance o. b. i., 3 1/2" str.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 54 Toledo trimming, m. d.
Press, No. 32 West arch, sgl. grd.
Planer, 24"x24"x6" Powell, 1 head.
Planer, 30"x30"x8" Powell, 1 head.
Planer, 33"x33"x12" Cincinnati, 2 hds.
Planer, 48"x48"x12" Betts, 3 heads.
Punch, Wickes, 48" thrt., cap. 1 1/2"x1".
Radial drill, 4" Mueller plain, (2).
Saw, Racine high speed, 6"x6".
Saw, 14" American metal swing m. d.
Separator, Dings magnetic, b. d.
Shaper, 20" Smith & Mills b. g. cr.
Shaper, 20" Milwaukee, b. g. crank.
Shaper, 24" Cincinnati, b. g. crank.
Shaper, 24" Potter-Johnson crk. m. d.
Shaper, 32" G. & E. Invincible type.
Shear, 72"x14 gauge cap., Niagara.
Slotter, 15-18" Dill, m. d.
Tapper, 1/2" Webster & Perks, 1-spdl.

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FOR SALE BY

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Band saw, 9" H. & R. metal cutting.
Bolt threader, 1½" Landis, sq. head.
Bolt threaders, 1½" and 2" National.
Drill, 20" Barnes camel back, single spindle, all geared.
Drill, 6-sp. Nat. Acme horizontal.
Drill press, 2½" Fosdick-Holloway radial, tapping attachment.
Grinder, 10" x 20" Landis plain.
Grinder, 10" x 36" Norton.
Grinder, 12" x 36" Modern plain, self-contained countershaft.
Grinder, No. 1 Greenfield plain.
Grinder, No. 1 LeBlond tool & cut.
Grinder, No. 2 Bath universal.
Grinder, No. 1953" Besly vert. disc.
Hack saw, 6"x6" Racine power.
Hammer, No. 1½-B High Speed riveting, m. d.
Hammer, No. 3-A High Speed riv.
Hammer, No. 5-A High Speed riv.
Jointer, 20" Oliver rd. safety hd.
Keyseater, No. 1 Mitts & Merrill.
Lathe, 14"x6", Walcott, quick change gear, taper att. 2 chucks.
Lathe, 14"x6" Monarch, q. c. g., ck.
Lathe, 18"x6" Greaves-K., q. c. g., ck.
Lathe, 20"x10" Draper, l. c. g., chuck.

Lathe, 24"x10" Hende, q. c. g., yoke head.
Lathe, 26"x14" Walcott, qck. chg. gear, taper att. chuck.
Lathe, 16"x5" Springfield, q. c. g., t. a.
Mill, No. 3 Kempsmith plain.
Mill, No. 3 Cincinnati plain.
Mill, No. 2 Cincinnati Hi Power plain, s. p. d.
Milling & drill, mch., No. 2 Knight.
Milling & drill, mch., No. 1 Knight.
Press, No. 8 Cleveland s. s. flywheel.
Press, No. 9 Cleveland o. b. i., flywheel, 44" stroke.
Press, punching No. 34 Toledo s. b., geared.
Shaper, 24" Rockford crank, b. g.
Shaper, 28" Ohio crank, b. g.
Slitter, gang, No. 513 Toledo, 36"x18 gauge.
Squaring shears, 11" D. H. Stoll 11 ga.
Squaring sh., 30" Peck-Stow-Wilcox
Turret lathe, No. 3 Foster, g. f. h.
Turret lathe, No. 7 Foster.
Welder, Agnew spot, 60 cycle, 440 v.
Welder, Taylor spot, 50 k. w., 60 cy., 440 v.
Woodworker, No. 103 Crescent univ

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Brown & Sharpe No. 10 Plain Grinding Machine, with all standard equipment.....	1200.
Brown & Sharpe No. 2 Surface Grinding Machine, belt drive, with standard equipment, Serial 3387.....	300.
Brown & Sharpe No. 2 Universal Milling Machine with triple friction countershaft, index centers, swivel vise, cutter arbor, oil pump, chuck, raising plate, etc.	850.
Bossert Machine Company's Die Slotter, tight and loose pulley drive, without countershaft, with round table.....	250.
Lucas Horizontal Boring, Drilling & Milling Machines, with 2½" diameter spindle, with cone drive, and countershaft; outer support adjusts vertically in unison with head in the regular way from horizontal shaft in the middle of the bed	750.
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- 42" Bullard Vertical Turret Lathe, New Era Type.
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- 36"x28' Lodge & Shipley Geared Head Lathe, with taper attachment.
- No. 16 Blanchard Grinder, motor in head.
- 48"x48"12' Cleveland Open Side Planer, 2 rail heads, 1 side head.
- 12" Heald Rotary Surface Grinder.
- 6"x32" Norton Plain Grinder.
- 10"x50" Norton Plain Grinder.
- No. 14 Brown & Sharpe Plain Grinder.
- No. 4 Warner & Swasey Universal Turret Lathe.
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This is only a partial list. Write for price on any tool you need, whether listed below or not.

Lathes

- 1-45"x24' Pond.
- 1-30"x12' L. & S. Sel. Hd.
- 1-27"x16' L. & S. Sel. Gd. Hd.
- 5-26"x16' Niles-Bement-Pond.
- 2-26"x16' Whitcomb-Blaisdell.
- 10-26"x16' Bridgeford.
- 5-26"x14' Niles-Bement-Pond.
- 5-26"x12' Bridgeford.
- 13-26"x11' Wickes.
- 40-26"x10' Niles-Bement-Pond.
- 21-26"x10' Canada.
- 15-26"x10' Whitcomb-Blaisdell.
- 44-26"x10' Bridgeford.
- 12-25"x12' LeBlond.
- 1-24"x20' Reed-Prentice, Grd. Hd.
- 9-24"x10' Cisco.
- 5-20"x22"x16' American.
- 1-20"x10' Hamilton, M. D.
- 1-20"x 8' Hendey.
- 30-20-22"x8' American.
- 2-18"x8' Greaves-Klusman.
- 1-18"x8' L. & S. Sel. Grd. Head.
- 6-18"x8' Lodge & Shipley.
- 1-16"x14' Reed-Prentice, G. H.
- 1-16"x8' Lodge & Shipley.
- 2-16"x6' Pratt & Whitney.
- 1-14"x6' American Geared Head.
- 8-8" Fitchburg Loswing.
- 9-3 1/2" Fitchburg Loswing.

Horizontal Boring Machines

- 1-No. 41 Rochester.
- 1-2-spindle Espen-Lucas Boring.

Milling and Drilling Machine.

- 5-No. 1 Barrett.
- 2-Rockford.

Auto. Screw Machines

- 6-No. 6-A Potter & Johnston.
- 2-No. 5-A Potter & Johnston.
- 1-No. 86 National Acme.
- 1-2" Cleveland.
- 1-1 1/2" 4-spindle Gridley.

Turret Lathes

- 2-24" Steidle.
- 1-24" Gisholt.
- 2-21" Gisholt.
- 3-20"x8' American.
- 24-19"x8' LeBlond Universal.
- 1-No. 6 Brown & Sharpe.
- 1-No. 2-A Warner & Swasey.
- 1-No. 7 Foster, Geared Head.
- 2-No. 3 Cincinnati-Acme Universal.
- 7-2-spindle Jones & Lamson.
- 3-16" Cincinnati-Acme-Fox.

Radial Drills

- 1-4' Western.
- 1-3' Gang Sensitive.
- 1-3' American Sensitive.

Drill Presses

- 1-No. 4 6-spindle Foote-Burt.
- 1-6 spindle Henry & Wright.
- 1-22" Barnes, Self Oiling.
- 1-No. 24 Foote-Burt.
- 2-No. 14 Colburn.
- 2-No. 314 Baker.

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- 1—No. 13 Brown & Sharpe.
- 3—No. 6 Fellows.
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Vertical Boring Mills

- 2—72" Gisholt.
- 3—42" Gisholt.
- 4—36" Bullard, New Era.
- 1—32" King.

Milling Machines

- 1—No. 5 Cincinnati Hi-Power.
- 2—No. 4 Cincinnati, Hi-Power.
- 3—No. 3-B Milwaukee.
- 1—No. 3 Kempsmith.
- 2—No. 3 Cincinnati.
- 3—No. 3 Brown & Sharpe.
- 1—No. 2½ Rockford.
- 1—No. 2 Cincinnati.
- 2—No. 25 Becker.
- 1—No. 3-S Cincinnati Universal.
- 1—No. 2 Hendey Universal.
- 1—No. 29 Ohio Universal.
- 1—No. 1-B Milwaukee Universal.
- 1—No. 1-D B. & S. Universal.
- 2—No. 1½ Garvin Duplex.
- 2—No. 3 Garvin.
- 3—No. 1 Van Norman, Hand.
- 4—Type B Briggs.

Vertical Millers

- 1—Model ACS 2-spindle Becker.
- 2—Model SD Becker.
- 3—No. 6 Becker.

- 1—No. 5-C Becker.
- 1—No. 5-B Becker.
- 2—No. 3 Cincinnati.
- 1—Model CS Becker.

Planers

- 1—72"x84"x12' Gray.
- 1—42"x42"x22' D. & H.
- 1—42"x42"x12' Gray.
- 1—42"x42"x 9' Niles - Bement - Pond.
- 1—42"x36"x14' Cincinnati.
- 3—36"x36"x18' Cincinnati.
- 1—36"x36"x16' Rockford.
- 2—36"x36"x10' Cincinnati.
- 1—36"x30"x20' Whitcomb-Blaisdell.
- 1—30"x30"x 6' Niles - Bement - Pond.
- 1—30"x30"x 8' Gray.
- 1—30"x30"x 8' Liberty.
- 1—24"x24"x8' Gray.

Grinders

- 1—24"x96" Norton.
- 1—18"x96" Norton.
- 2—14"x72" Norton.
- 4—14"x50" Norton.
- 1—12"x120" Landis.
- 1—10"x72" Norton.
- 1—No. 16, 10"x72" B. & S.
- 1—10"x52" Landis.
- 6—10"x50" Norton.
- 1—No. 14, 10"x30" B. & S.
- 8—10"x36" Norton.
- 2—10"x24" Norton.
- 9—6"x32" Norton.
- 3—6"x18" Landis.
- 1—12"x36" Cincinnati Universal.
- 2—No. 2½ Universal.
- 2—No. 60 Heald.
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4¹ Hammond b. b. Sens. Radial, t. a.
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25¹ Snyder Upright Drill.
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3-sp. Superior b. b., No. 3 Morse taper.
Avey 2-sp. b. b., No. 2 Morse taper.
Allen s. sp., b. b., No. 2 Morse taper.
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No. 2 Mfg. Colburn heavy duty Drill.
No. 25 Foote-Burt heavy duty Drill.
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equipped with 8 spindles.
D-No. 2 Colburn Heavy Duty Drill.
No. 0 Fox Multiple, 6-spindles.
No. 3 Fox Mult., equipped 12 spindles.
No. 5 Fox Multiple, 12 spindles.
No. 13 Pratt & Whitney Mult., 8-spdl.
No. 37 Natco Mult., equip. 20 spindles.

ENGINE AND TURRET LATHES

42"x30¹ Amer. g. h. Lathe, q. c., late.
36"x30¹ Amer. tr. grd., q. c., late type.
36"x18¹ Amer. tr. grd., q. c., late type.
36"x22¹ Springfield tr. grd., stan. ch.
36"x16¹ L. & S. sel. g. h., q. c.
30"x12¹ Lodge & Shipley, q. c., late.
28"x18¹ Schumacher & B. q. c. Lathe.
42"x18¹ Amer. G. H., q. c. m. d., late.
28"x14¹ Schumacher & B. q. c. Lathe.
24"x12¹ LeBlond q. c. Lathe.
30"x14¹ Lodge & Shipley q. c.
24"x14¹ L. & S., q. c., tap. att.
24"x14¹ Whitcomb-B. g. h., q. c.
24"x12¹ Lodge & Shipley q. c. Lathe.
21"x10¹ LeBlond gd. hd., q. c., late.
24"x10¹ G. & K. q. c.
24"x10¹ Boye & Emmes q. c. Lathe.
22"x12¹ Whitcomb-Blaisdell semi-q. chg.
22"x10¹ L. & S. sel. g. h., q. c.
21"x10¹ LeBlond q. c. Lathe.
20"x10¹ American q. c.
19"x10¹ LeBlond q. c. Lathe.
18"x12¹ Cisco q. c. Lathe.
18"x8¹ LeBlond q. c. Lathe.
18"x 8¹ Mueller, q. c. Lathe.

18"x8¹ L. & S. sel. grd. hd., q. c.
16"x10¹ Hendey, yoke hd., q. c., t. a.
16"x6¹ & 16"x8¹ Monarch g. h., q. c.
16"x8¹ and 16"x6¹ Hendey yoke head,
q. c. Lathe, taper att., late type.
16"x 6¹ Monarch quick change Lathe.
14"x 6¹ L. & S. sel grd. hd., q. c., late type.
14"x6¹ & 14"x8¹ Am., h. d., g. h., q. c.
No. 2A Warner & Swasey, Universal
hol. hex. Turret Lathes.
No. 1-B Foster Univ. Hol. Hex. Turret
Lathe, bar equipment.
24¹ & 21¹ Gisholt turret, t. a., late.
18¹ Libby type A turret, 3¹/₂" sp. hole.
3"x36¹ J. & L. Turret, bar equipment.
3"x36¹ J. & L. Turret, chuck equip.
3"x36¹ J. & L. dbl. spdl. Turret Lathe.
3¹/₄"x40¹ Greenlee Tur., bar equip.
Nos. 2, 4, 6 Warner & S. Turret Lathes.
Nos. 2, 4, 6 Foster Turret Lathes.
No. 4 Brown & Sharpe Wire Feed Screw
Machine.
No. 4 Bardons & O. Turret Lathes.
No. 4 Millholland Turret, g. h., m. d.
1¹ Biggs Hand Screw Machine.

GEAR MACHINERY AND GRINDERS

No. 5-A Lees-B. Gear Hobber.
No. 12 Barber-Colman Gear Hobber.
6¹ Gleason Bevel Gear Generator.
No. 6 Fellows Gear Shapers.
20¹ Ingle Gear Tooth Rounding Mche.

No. 6-60¹ B. & S. Auto. Sp. Gr. Cut.
No. 4-48¹ B & S. Auto. Spur Gear Cut.
No. 3-26¹ B. & S. Auto. Spur Gear Cut.
24¹ Cincinnati Auto Spur Gear Cutter.
84¹ Diamond Face Grinder, arr. for m.d.

EASTERN MACHINERY CO

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

- No. 3 W. & M. Auto. Surf. mag. chk.
- No. 2 Brown & S. Auto. Surf. mag. chk.
- No. 2 LaSalle Auto. Surf. mag. chuck.
- 16" Heald Rotary Surface mag. chuck.
- No. 2 W. & M. hand feed Surface.
- 14" P. & W. Vert. Surf. Grind., m. c.
- 6"x32" Norton Pl., late, 8200 serial.
- 10"x36" & 10"x52" Landis Pl., s-con.
- 8" Heald Grinder & Surf. Style No. 200.
- Nos. 70 & 75 Heald Internal Grinders.
- No. 60 Heald Cyl., late type, complete.
- Capital Internal, collet attachment.
- No. 120 Gardner Double Disc.
- No. 6-26" Gardner b. b. Disc.

- No. 18-30" Gardner Pat. Mkrs. Disc.
- Walker single stroke Surface Grinder,
- 10" dia. magnetic chuck.
- No. 8-40" Gardner Disc with Press.
- Nos. 3 & 4 B. & S. Univ., late.
- Yankee Twist Drill Grinder-NEW.
- 6"x18" Landis Pl. self-cont. arr. m. d.
- No. 1-4"x20" Morse Plain Grinder.
- 12"x36" Cincinnati Plain.
- 8"x30" Modern Plain, self-contained.
- No. 2 Oakley Univ. Tool & Cutter.
- No. 2 Norton Univ. Tool & Cut. Grinder.
- No. 1 LeBlond Univ. Tool & Cutter.

SHAPERS AND PLANERS

- 24" Milwaukee hvy. duty, b. g. Crank.
- 24" Ohio hvy. duty, b. g. Crank.
- 20" Gould & Eberhardt b. g. Crank.
- 20" Cincinnati heavy duty b. g. Crank.
- 16" G. & E. high duty b. g. Crank.
- 16" Gould & Eberhardt High Duty b. g. Crank.
- 16" Hamilton heavy duty, b. g., Crank.

- 16" Smith & Mills h. d., b. g., Crank.
- 16" Steptoe heavy duty, b. g., Crank.
- 16" Cincinnati Hvy. Duty b. g. Crank.
- 15" American Tool Works Crank.
- 14" Steptoe Crank.
- 38"x38"x18" Niles Planer, 2 heads.
- 36"x36"x10" N-B-P Pl., 2 hds., arr. m. d.
- 24"x24"x8" W. & P., 1 head.

MILLING MACHINES

- No. 4 LeBlond Univ., cone pu. complete
- No. 4 B. & S. Univ., c. p., complete.
- No. 4 Cincinnati Plain, cone pulley.
- No. 3 Hendey Univ., c. p., complete.
- Nos. 3 B. & S. Univ., c. p., comp.
- No. 3H LeBlond Univ., c. p., comp.
- No. 3 Kemp. Univ., c. p., comp.
- No. 1-B LeBlond Univ., cone pul. comp.
- No. 1 1/2 Valley City Univ., c. p., complete.
- No. 1 1/2 Owens Univ., cone pul. compl.
- No. 1 Hendey Univ., cone pul. compl.
- No. 1-B B. & S. Plain, single pulley.
- No. 5 LeBlond Plain, m. d., all geared.
- Nos. 3 & 4 Cincinnati h. p. Plain, c. p.
- No. 4 Cincinnati h. p. Vert., s. p., power rapid traverse, late type.
- No. 3 Cincinnati h. p. Pl., s. p., power rapid traverse, late type.

- No. 3 Hvy. Ohio Plain, c. p., p. r. t.
- No. 3 Hvy. LeBlond Plain, cone pulley.
- No. 3 Kempsmith Plain, cone pulley.
- Nos. 2 & 3 Cincinnati Plain, cone pulley.
- No. 2 1/2 LeBlond Plain, c. p.
- No. 1 Kempsmith Plain, cone pulley.
- No. 0 1/2 Cincinnati Plain, cone pulley.
- No. 21 Brown & S. Auto., latest type.
- No. 2 Brown & Sharpe Vertical Millers.
- No. 3 Becker Vertical Miller.
- 28" Cincinnati semi-auto. Duplex.
- 24" Cincinnati Automatic Duplex Miller.
- 18" Cincinnati Plain Mfg. Millers.
- Gooley & Edlund, Briggs type, Mfg.
- No. 6 Whitney Hand Miller.
- No. 2 Bristol b. b. Hand Miller.
- No. 2 Knight Milling and Drilling Mche.

MISCELLANEOUS

- No. 5 Greenard Arbor Press.
- No. 4 Atlas Arbor Press.
- No. 55 Atlas Power Arbor Press b. d.
- 15-Ton Herc. Pwr. Arbor Press.
- No. 24 New Brit. Auto. Chkg. Mche.

- 1 1/4" Model "B" Cleveland Automatic.
- No. 52 Nat. Acme Automatic.
- No. 3A LaPointe (Hudson) Br. Mch.
- 15 ton Lucas Pwr. Forc. Press, b. d.
- No. 3 J. N. LaP. Dbl. Beanch. Mch.

(Continued on next Page)

And Many Others. Send Us Your Inquiries.

808 E. Pearl St., CINCINNATI, O.
What have you to Sell?

Miscellaneous Tools (Continued from Preceding Pages)

No. 3-B J. N. LaPointe Broach. Mch.
 1st Acme Class "A" Bolt Cutters.
 1½" & 2" Landis dbl.-sp. Bolt Thread.
 1" Landis Bolt Thread., lead screw.
 72" Bickford vert. Bor. Mill, 2 heads.
 42" Bausch Vert. Boring Mill, 2-hds.
 24" Bullard rapid prod. Vert. Boring Mill, turret and side head.
 24" Bullard New Era Vert. Bor. Mill.
 51" Niles Vert. Boring Mill, 2-heads.
 51" Bullard Vert. Boring Mill, 2-hds.
 Nos. 2 & 3 P. & W. Die Sinkers.
 No. 64 Cons. s. s. Power Press, sgl. cr.
 No. 3 Bliss, Stiles pattern, Pwr. Press.
 No. 73½ Bliss Trim. with side shear.
 6" Toledo Pwr. Sq. Shr., 14 ga. cap.
 No. 272 Niagara 72" Pwr. Sq. Shear.
 72" Kutschied Pwr. Sq. Shear, 12 ga.
 No. 1 Davis Keyseaters, cap. 1"
 No. 00 Baker Keyseater, cap. ¾".

No. 5 M. & M. Keyseaters.
 25 lb. Little Giant Trip Hammer.
 No. 3A High Speed Riv. Hammer.
 40 & 60 lb. Bradley Helve Hammer.
 600 lb. Chamb. Spl. Frame St. Ham.
 4½"x12" & 6x14" P. & W. Thread.
 No. 12 P. & W. 2-spindle Profilers.
 No. 1 Garvin 2-Spindle Profiler.
 No. 1 P. & W. 2-sp. Gun Bar. Drill.
 18"x12"x12" Worthington dbl. steam drive Air Comp, cap. 700 cu. ft.
 8½"x10" Worth. Air Comp., b. d.
 12"x12" Racine Hi. Spd. Pwr. Hack.
 6"x6" Racine H. Spd. Pwr. Hack Saw.
 12" Wm. Sellers Slotter, cir. table.
 Blevaney type "A" Polishing Mche.
 Winfield Elec. Spot Welder, cap. to weld 2 pieces of ¼" material.
 Nos. 1 & 2 Garvin Auto. Tap Mcha.
 Nos. 2X & 2BG Garvin Auto. Tap.

Many Others. Send Us Your Inquiries.

EASTERN MACHINERY CO.
 408 E. Pearl St., Cincinnati, Ohio

BARGAINS

10 Ft. GEO. A. OHL Power Press Brake.
 Nos. 0 & 1 BROWN & SHARPE Hand Screw Machines.
 No. 1 BROWN & SHARPE Plain Milling Machine.
 No. 2-A BROWN & SHARPE Universal Milling Machine.
 No. 3 BECKER Vertical Milling Machine.
 No. 6 WHITNEY Hand Milling Machine.
 No. 36 McDONALD Gang Slitter, complete.
 No. 3 DWIGHT Slate Marking Machine.

WE SPECIALIZE in POWER PRESSES
and have many bargains

Send us your inquiries

J. P. Rentschler & Company
 605 W. Washington Blvd., Chicago, Illinois

Steel and Gray Iron Foundry Equipment

- 1—Beardsley-Piper Stationary Type Sandslinger. With 10' Arm. A.C. motor drive. Complete with feeder elevator and 12' rotary turn-table.
- 2—6-Ton Electric 2-Pole Furnaces.
- 1—Moore Electromelt 3000 K. V. A. Pittsburg Polyphase Furnace Transformer. Latest type.
- 3—6-Ton Whiting Bottom Pour Lds.
- 3—3-Ton Whiting Lip Ladles.
- 5—Herman 36" Roll-Over Molding Machines.
- 2—Pridmore 26" Roll-Over Molding.
- 200 Truscon Pressed Steel Flasks 24".
- 2—Pangborn Sand Blast Outfits, and Sand-Blast Rooms, complete.

Air Compressors

- 2—Type X B Ingersoll-Rand Duplex Compressor (New); size 22x16, 13x16; capacity 1200 cu. ft.; with 206 H. P. A. C. Slip-ring motor.
- 1—Type X B Ingersoll-Rand Duplex Compressor (New); size 22x16, 13x16; capacity 1200 cu. ft.; arranged for short belt drive (New).
- 1—Rand Imperial Type Air Compressor; capacity 2,200 cu. ft., horizontal, double acting, steam driven.
- 1—Ingersoll-Rand Air Compressor; Capacity 1,150 cu. ft., steam driven.
- 1—19x14 GC2, Chicago Pneumatic Duplex Compressor; capacity 600 cu. ft., direct driven through short belt to 120 H. P. Lincoln Motor, 440-v. 3 ph. 60 cy.

Motors-Generators-Transformers

- 1—100 KW Lincoln Motor Generator Set; slip ring motor 440-v. 3-ph. 60-cy. 600-RPM.; 100 KVA; mounted on cast iron base and direct connected to 100 KW Lincoln generator 250-v. DC; complete with starting equipment and instrument board.
- 1—General Electric Motor Generator Set; 100 KW; 1200 RPM; 150 HP.; Synchronous motor; generator, 220 volt, D. C.; complete with control board and all instruments.
- 1—25 KW Motor Generator Set; 125 volts; 320 amps.; 1,150 RPM; with General Electric 35 HP. induction motor; 3-phase, 60 cycle, 440-volt, 1,150 RPM, with 25 HP. Allis-Chalmers starter.
- 1—General Electric 156 KW Belt-driven Generator; Type ATB; generates 440-volt, 3-phase, 60 cycle, 600 RPM; with starting compensator, pulley and base. (d).
- 1—7½ Motor KW General Electric;

- 230 volts, DC; General Electric type; L. C. Shunt wound; 1,100-1,500 speed; direct connected to 10 HP.; 440 volts, 3 phase, 60-cycle; 1,200 RPM; AC. motor; ammeter; voltmeter; compensator.
- 2—Gas Engine Generator Set; Rathbun (Ingersoll-Rand) Gas Engine; Ridgeway generator; 3 cylinder vertical; 150 HP. gas engines; size 12½x15"; direct connected to 75 KW 250 v., D. C. generator (Ridgeway).
- 2—Hertner Battery Charging Generators; Vertical type; Type AE 4424; produce 45 v., 45 amp.; 1,750 RPM; run on 440 volt, 3 ph., 60 cycle; can be reconnected for 200 volts.

Large Milling Machines

- 1—42"x37"x12' Ingersoll Milling Machine (Planer Type) 2 Vertical Heads on rail. One Horizontal spindle on each housing. Arr. m. d. 1—40"x24"x12' Ingersoll Milling Machine (Planer Type) 2 Side hds., 1 Vertical Head.
- 1—36"x22"x16' Ingersoll Milling Machine (Planer Type) 4 Heads in front—6 Spindles, 2 Top Heads 2 spindles each.
- 1—36"x24"x14' Ingersoll Milling Machine (Planer Type) Fixed rail type, 1 vertical spindle in rail, one Right Hand and one Left Hand Horizontal Spindle.
- 1—30"x24"x8' Ingersoll Milling Machine (Planer Type) adjustable rail. 2 Heads on Cross rail. 1 swivel side head.
- 2—21"x24"x12' Ingersoll Milling Machine (Planer Type) 3 Head. Adjustable Rail Arranged for constant speed motor drive. All geared feeds to heads and table.

Large Lathes

- 2—36"x20' Bridgeford Geared Head Quick change gear Lathe arranged for motor mounting attached to base.
- 1—36"x20' Bridgeford Geared Head Quick change gear Lathe arranged for motor mounting on head stock.
- 1—36"x40' Bridgeford Geared Head Boring Lathe arranged for motor mounting on head stock.
- 2—36"x56' Bridgeford Geared Head Boring Lathe arranged for motor mounting on head stock.
- 1—36"x30' American Geared Head arranged for constant speed motor drive on head with 35 H. P. Motor.
- 1—50"x20' Driggs Triple Geared Lathe arranged for motor dr. on hd.
- 1—50"x30' Putnam Triple Geared Lathe arranged for motor dr. on hd.

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LOUIS E. EMERMAN & CO.,

1761 Elston Ave.,
CHICAGO, ILL.

Bath's Guaranteed

Bolt Cutters

1½" Acme staybolt cutter.
1½" Landis, sgl. head, with dies.

1¼" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
10" Betts, 2 heads, rapid power traverse, motor drive, excellent.

51" Niles-Bement-Pond.
64" Ridgway 2 heads, gear feed, excellent.

Cranes

15-ton Niles and P. & H. Cranes, 51' and 45' spans, D. C.

Drills

Allen single spindle ball bearing.
4-spdl. Moline rail drill, 1½" cap.
No. 1, 8' wall radial.
21" Cincinnati Bickford, sliding head, late type.
24" No. 25 Foote-Burt, with compound table.

Several 20" and small sens. drills.
16" Barnes drill press, 3-spindle.
No. 41 Natco, round index table, 8-spindle.
4" Prentice Radial.
24" Foote-Burt, S. P. D. reversing spindle for tapping.

Forging Machines and Bulldozers

4" Ajax, steel bed.
2" Ajax, cast iron bed.

¾" and 1½" Acme, steel bed.
No. 2 Williams & White bulldozer.

Grinders

84" Diamond face grinder.
18x96" Norton plain.
Various electric floor grinders and grinding stands.
26" horizontal disc grinder.
No. 2 Gardner belt driven disc grinder, 18" wheels.

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.
No. 2 Baker, capacity 2"x20½".
No. 5 Mitts & Merrill, 3½" capacity.

Lathes

12"x5" Carroll-Jamieson.
No. 2 Baker, capacity 2"x20½".
16"x8" Pratt & Whitney, semi q. c. g., taper and relieving attach.
26"x10" Greaves-Klusman lathe.
30"x14" Boye & Emmes, double back geared.
36"x14" Schumacher & Boye, triple geared.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 0 Rockford plain, 22"x6½"x15".
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 4 Cincinnati high power miller, table 64½"x16½".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

36"x36"x14" Gray planer, 2 heads.
60"x60"x20" Cincinnati, 3 heads, very good.
48"x48"x14" Hamilton, 4 heads.
48"x16" Detrick & Harvey openside planers.
12" and 22" Springfield, crank shaper.
24" Queen City shapers.

Punches and Shears

Garrison steel bed alligator shear, 2" capacity.
84" throat, Long & Allstatter, capacity about ¾" thru ¾".
48" throat No. 5 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
Lennox rotary bevel shear, ¾" capacity.
No. 307 Niagara circle shear, ¼" capacity, 24" throat.

Turret Lathes and Screw Machines

No. 1-B Foster universal.	No. 4 Bardons & Oliver.
3"x36" Jones & Lamson.	1" Garvin screw machine.

MISCELLANEOUS

Blower, No. 4 Root, motor drive.	Hammer, 100 lb. Bradley helve.
Blowers, Nos. 1 & 2 Buffalo Forge.	Pipe Machines, 8" Merrill.
Chain Hoists, ½, 1, 1½, 4 & 6 ton.	Slotter, 48" Niles-Bement-Pond,
Cut-off Saw, metal, Hunter high	motor drive.
speed, motor drive.	

Machinery Av., N. E., Cleveland, O.

We Please the Most

All Rebuilt Machine Tools Sold

This Is Only Partial List—

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
18"x 8' Prentice, compound rest, l. c. g., chuck.

18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18" x 8' Porter, 4-step cone, s. b. g., q. c. g. engine lathe, complete, new.
18"x 10' Star, 4-s. c., a. g., with 16" 4-jaw ind. chuck.
20"x 8' Reed friction head, with turret on carriage.
24"x 10' Greaves & K., c. r., q. c. g.
30"x 10' S. & B. c. r., loose change gear

TURRET LATHES AND SCREW MACHINES

No. 00 Brown & Sharpe auto.
No. 0 Brown & Sharpe auto., (2).
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a. c. and b. f.
No. 55 Nat'l Acme 4-spd. auto.

No. 3 Foster g. f. h. turret screw mch., with p. f. carriage and turret.
24" Cleveland model "A" auto. screw mch., with 5-hole turret.
No. 2-G Brown & Sharpe auto-matics (2).
No. 2 Brown & Sharpe turret forming (2).
1"x 7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
1"x 7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
24" American enclosed head, gear box, belt drive, Radials (2).
3' American sensitive radial with t. a. and elevating table.
4' Mueller, gear box, sgl. pulley dr.
5' and 6' Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
21" Aurora W. & L., square base, stationary head.
6' Western, with speed box, tap. att.
5' American triple purpose, with speed box.
No. 14 Colburn heavy duty.
No. 25 Foote-Burt heavy duty, (2).
13-spindle Moline, cam fd., two tbl.
No. 1, 7" overhang, single spindle, Allen, h. s., b. b.

No. 14 Natco (2).
Fox multiple spindle, sliding head, arranged for 12 spindles (4).
3-sp. Edlund, high sp., ball bearing.
No. 22 Colburn, sgl. sp., hvy. duty, 14" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
No. 30 Natco, belt driven.
No. 44 Colburn, sgl. sp. heavy duty, 24" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 24" cap. with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.,

Exacting Customer

on Thirty Day Guarantee

Let Us Have Your Inquiries

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
No. 2 Cincinnati vertical, s. p. d.
No. 3 Cincinnati plain, s. p. d. (2).
24"x18"x60" Ingersoll, Farwell vertical milling head.

Becker 2-spindle, with rotary table.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing, (2).

SHAPERS AND PLANERS

16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control.
20" Hendey friction, (2).
16" Smith & Mills, back grd. crank.

22"x22"x 5' Putnam planers, (2).
30"x30"x10' Woodward & Powell, three heads.
72"x72"x26' Fitchburg, four heads.

CENTERING MACHINES

Centering machines, single spindle Cadillac.

GRINDERS

No. 2 Cincinnati univ., latest type.
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14-48" B. & S. plain, (4)
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
Webster & Perks, h. s., b. b., double spindle polishing lathes, cabinet base (9).
No. 3 Brown & Sharpe planer type surface grinder.

No. 14 Besly disc grinder.
No. 10-18" Besly disc grinder.
No. 6-18"-1 Besly disc grinder.
Gisholt universal form tool grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 2 Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C&A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

Arbor press, No. 28 Atlas.
Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
Broach, No. 2 double Lapointe.
Hammer, No. 14-B High Speed.
Hand brake, 3' Dreis & Krump.
Hand brake, 5' Dreis & Krump.
Layout plates, 30"x36" and 36"x48" C. I., mounted on portable stand.
Marking machine, Etchograph.
Oil extractor, No. 180 Curtis.

Oil extractor, No. 400 Curtis with hoist.
Oil extractor, large size American, with pedestal for motor drive.
Pipe machine, No. 300 Oster, 1" to 2".
Pipe machine, 8" Jarecki, No. 88.
Profiler, No. 12, 2-spl. P. & W. vert.
Scleroscopes, Shore, (4).
Slitting shear, No. 206 Niagara, pwr.
Toggle drawing press, No. 1 Bliss, double action.

Cleveland, Ohio; Detroit, Michigan

1", 1½" 2", 2½", 3", 4", 5", 6" Ajax Upsetters.
 ¾", 1", 1½", 2½", 3", 4" and 5" Acme Upsetters.
 Nos. 2, 3, 4, 5 and 9 Williams-White Bulldozers.
 50, 75, 100, 150 and 200 lb. Bradley Upright Hammers.
 40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
 2000 lb. Chambersburg Steam Drop Hammer, late type.
 No. 52 and No. 74½ Bliss SS Presses.
 No. 76½ Bliss Trimming Press, side shear.
 No. 2 Billings & Spencer Trimming Press.
 No. 56 Toledo Geared Trimming Press, M. D.
 No. 46C Bliss Press, dist. bet. uprights 96", wt. 30,000 lbs.
 Alligator Shears, various capacities. Guillotine Shears 1½", 4".
 No. 5 Stiles Solid Back, Single Geared Press, Motor Drive.
 Long & Allstatter Multiple Punch, ram 84", weight 25,000 lbs.
 L. & A. Size B Dbl. End Punch, 18" throats, 2¼" thru 1¼".
 Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. 1" thru 1".
 Williams White SE Punch, 36" thrt., arch. jaw, M. D., 1¼" thru 1".
 Kling Bros. SE Punch, 1" thru 1", 48" throat, arch. jaw.
 No. 6 Whiting Sgl. End Punch, arch. jaw, 16" throat, ¾" thru ¾".
 Ryerson Quadruple Combination Punch, Bar and Angle Shears.
 Pels Quadruple Combination Punch, Bar and Angle Shears.
 Long & Allstatter Plate Shear, cap. 4'x½", M. D., on turn table.
 Williams-White Dbl. Angle Shear, 6x6x1", M. D., on turn table.
 Whiting Stake Riveter or Punch, 48" throat, 2 gag sockets.
 No. 3 Ryerson High Speed Friction Saw, cap. 24" beams.
 No. 2 Ajax Hot Saw and Burring Machine.
 12' Wall Radial Drill for Structural Work.
 Detroit 5-spindle Semi-Automatic Drills.
 2-spindle 1" Landis Threading Machine, practically new.
 Other Threading Machines: 1 and 2-sp. Acme & Landis 1" to 4".
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 Wire Straighteners, 3/16", ¼", 5/16" and ¾".
 No. 1A Am. Carbonizing Furnace, Nichrome Retort & Heat Contr.
 No. 65 American Gas Heating Machines.
 3A and 4A High Speed Riveting Hammers, M. D.
 Abbott Double Compartment, water tight, Burnishing Barrel.
 Thread Rollers, Cold Headers, Bolt Trimmers.
 Cold and Hot Pressed Nut Machines.
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- 1-14"x6' Hendey.
- 1-16"x7' Hendey T. A. with relief. att., draw-in collets, and pan bed.
- 1-20"x8' Monarch.
- 2-18"x8' Reed.
- 1-18"x24"x64' Rahn Larmon gap.
- 1-18"x10' Cisco.
- 1-16"x8' Lodge & Shipley all grd., motor drive, taper attachment, draw-in collets, full equipment.
- 1-14"x6' American late type, all geared with motor in leg, draw-in attachments, collets full equip.
- 1-4' Rivett Bench, complete equip.

MILLS

- 1-No. 3-S Cincinnati Full univ. rectangular over arm, all geared, comp. with full equip., motor dr.
- 1-No. 2 Cincinnati universal.
- 1-No. 2 Hendey universal.
- 2-No. 2 Brown & Sharpe plain.
- 3-No. 2 Cincinnati plain.
- 2-No. 2 Van Norman Duplex.
- 2-Newton spline mills.
- 1-No. 2 Knight combination.
- 1-No. 14 American plain.
- 1-No. 2 Pratt & Whitney vert. die sinker direct motor drive.
- 1-24" Cincinnati auto., dir. mtr. dr.
- 1-12" Cincinnati semi-auto mfg.

SHAPERS AND PLANERS

- 1-16" G. E. late type all geared, single pulley dr. with oil system and direct connected motor dr.
- 2-24" G. & E. arranged for m. d.
- 1-24" G. & E. cone, back geared.
- 2-30" Kelly, cone, back geared.
- 1-16" Kelly, back geared.
- 3-20" Hendey friction.
- 1-20" Steptoe, back gear.
- 1-30"x30"x8' Wilson.
- 1-36"x36"x12' Bickett.

DRILLS

- 3-Leland & Gifford 2 spdl. H. S. B. B. direct connected motor dr.
- 1-Avey 2 spindle H. S. B. B. direct motor drive.
- 2-20" Cincinnati-Bickford, direct motor drive including motor.
- 1-21" Cincinnati-Bickford, dir. m.d.
- 3-2 spindle Fosdick H. S., B. B.
- 1-4 spindle Avey H. S., B. B.
- 1-Single Spindle Henry & Wright H. S., B. B.
- 1-26" Barnes Camel Back ar. m. d.
- 2-24" Cincinnati Bickford sliding head B. G. P. F.

- 4-26" W. F. & J. Barnes, sliding head B. G. P. F. and tap. att.
- 1-3' Cincinnati-Bickford Radial.
- 1-4' Mueller Radial.

GRINDERS

- 6-No. 2 B. & S. Sur. mag. chucks.
- 1-No. 2 LaSalle Surface, motor drive with magnetic chuck, generator and demagnetisor.
- 1-Cincinnati Tool & Cutter, full equipment, direct motor drive.
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- 2-No. 3 W. & M. surface.
- 3-No. 65 Heald cylinder.
- 1-22" Heald rot. surf., 16" m. ch.
- TURRET LATHES & SCREW MCHS.**
- 7-18" Gridley Model G, 4 sp. auto. direct con. m. d. with motor.
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PRESSES

- 2-No. 6 Rockford s.s. flywheel type
- 4-No. 22 Rockford Horning fly-wheel type.
- 3-No. 3 Rockford O. B. I. fly-wheel type.
- 1-D. D. G-4 Ferracute dbl. action.
- 1-No. 66 Bliss double action.
- 1-No. 837 Toledo, rack & pinion.
- 1-No. 24 Michigan Horning.
- 2-No. 20-B Bliss O. B. I.
- 1-No. 5 Michigan O. B. I.
- 1-No. 4 Bliss Stiles type, geared.
- 1-10' Bertsch 16 gauge over driven squaring shear.
- 1-10' Chicago 16 gauge steel hand brake.

MISCELLANEOUS

- 1-P. & W. Relieving Lathe.
- 1-8" Newton Slotter.
- 4-Hurlburt & Rogers cut-off.
- 1-Lees Simplex Cold Saw.
- 10-Air compressors.
- 2-No. 3 double LaPointe
- 2-Rickert & Shafer complete auto-threading mches., with mtr. dr.
- 3-Type T-2 Rickert & S. tap. mch.
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Baush Multiple Drill, 12-spindle.
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Saws, 18" Higley Cold; Cochrane-B. No. 4C Metal.
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- 1—Niles 42" vertical, 2-head.
- 1—Rockford No. 2 horizontal.
- 1—Bement-Miles horizontal.
- 1—Cleveland 24" bar, horizontal.

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- 10—Gridley 3 1/2", 4" single spindle.
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- 4—Cleveland 1", 1 1/4", 1 1/2", 1 3/4", 2" "B"
- 14—New Britain Nos. 23, 24, 33, 34, 53.
- 1—New Britain No. 22 chucking.
- 2—National Acme Nos. 52, 54.
- 11—P. & J. No. 5-A, No. 6-A.

DRILLS—Multiple Spindle

- 3—Baush Nos. 2, 3 and 4.
- 4—Natco Nos. 11, 13, 14 rect. hd.
- 7—P. & W. Nos. 11, 12, 13.
- 1—Moline No. 5-D, 6-spindle.
- 1—Foote-Burt No. 25.
- 3—New Garvin 6-spindle.

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- 5—Allen 3 and 4-spindle, h. s., b. b.
- 2—Colburn Nos. 2 and 4.
- 1—Barnes 4-spindle gang, 20"
- 4—Cincinnati 20", tap. att.
- 2—P. & W. Nos. 1, 1 1/2 gun barrel.
- 1—H. & W. 4-spindle.
- 1—New No. 3 Turner vertical.
- 3—Baker No. 310.
- 1—Baush 6" radial.
- 1—N.B.-P. 96" plain radial.
- 1—Cincinnati 42" radial.
- 1—Dreses 8" radial.

PLANERS

- 2—Putnam 26x26x8", 2 heads.
- 1—American 36x36x12", 4 heads
- 1—Gray 38x38x28", 3 heads.
- 1—Gray 60x60x20", 4 heads.
- 1—Putnam 48x48x12", 2 heads.

TURRET AND SCREW MCHS.

- 9—Gisholt 24", 6 1/4" hole.
- 11—New P. & W. 7/16"
- 4—Greenlee 2 1/2x26.
- 4—J. & L. 2x24, 3x36.
- 1—Foster No. 1B.
- 2—Libby 26", 4 1/4" and 7 1/4" hole.
- 3—W. & S. Nos. 4 and 6.
- 6—Foster Nos. 4, 6.
- 1—Acme Fox Monitor.

MILLING MACHINES

- 2—B. & S. Nos. 2A & 3A universal.
- 1—Cincinnati No. 3 universal.
- 1—Kempsmith No. 2 universal.
- 5—B. & S. Nos. 2, 3, 4, plain.

- 5—Cincinnati Nos. 2, 3, 4, 5 plain.
- 1—Hendey Norton No. 3 plain.
- 2—Kempsmith Nos. 3 & 33 plain.
- 11—Becker Nos. 3H, 4B, AB, 5C, 6, C1, vertical.
- 15—P. & W. 5", 8", 10" automatic.
- 9—P. & W. 4 1/2x12, 6x14, 6x48, 6x80 thread.

SHAPERS AND SLOTTERS

- 1—Stockbridge 20" shaper.
- 1—Ohio 22" crank shaper.
- 1—Queen City 16" shaper.
- 1—Rhodes 7" vertical shaper.
- 2—Gould & E. 16", 24" shapers.

PRESSES

- 5—Bliss No. 52.
- 1—Toledo No. 165 toggle tierod.
- 1—Toledo rack and pinion.
- 25—Waterbury Farrel double connection, 2" and 4" stroke.

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- 1—Acme 2" double head.
- 3—Acme 1 1/2" 2-spindle.
- 3—National 1 1/2", 2-spindle.
- 1—Acme 4" single spindle.

GEAR CUTTERS

- 1—Whiton No. 1 gear cutter.
- 5—Barber Colman Nos. 3 and 12.
- 7—H. & S. 3x36, 3x26, 4x36.
- 2—B. & S. No. 6, 60" cap.
- 1—Lees-Bradner No. 5-A.
- 6—G. & E. No. 15-H.
- 20—Fellows Nos. 6, 61, 615.
- 11—Gleason 3", 6", 11", 18".
- 1—Gleason 24" bevel gear planer.
- 3—Fellows Gear Grinder.
- 10—Cross gear tooth rounders.

LATHES

- 12—Hendey 12"x5", 12"x6", 16"x6".
- 4—Seneca Falls 12"x6", q. c. g.
- 10—South Bend 15x5, 18x8 gap.
- 1—Fay & Scott 20-42", gap.
- 1—Walcott 26"x10"
- 1—Bridgeford 26x12", q. c. g.
- 1—Greaves-Klusman 26x12".
- 1—Johnson 30x12", motor drive.
- 1—Bridgeford 42x38", geared head.
- 3—LeBlond 26x10 duplex crank.
- 2—LoSwing 3 1/2x84, 2 carriage.
- 3—Porter Cable.
- 40—New Star—all sizes.

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- 1—Diamond 84" surface grinder.
- 4—B. & S. Nos. 10, 11, 12 plain.
- 4—Cincinnati No. 2, 12x36, plain.
- 7—Landis 6x18, 10x20, 10x36, 12x36.
- 7—Norton 6x32, 10x36, 16x36, plain.
- 5—Heald Nos. 68, 70 internal.
- 1—Bath universal grinder.

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- 26" Cincinnati Upright, C. D.
- 26" Rockford Upright, C. D.
- 25" Barnes Upright, C. D.
- 25" Superior Upright, C. D.
- 21" Canedy-Otto, B. G. P. F.
- 14" Canedy-Otto, motor drive.
- 15" Barnes Upright.

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- 24"x24"x12" Chandler, 2 heads.
- 26"x26"x 8" Woodward & P., 1 hd.
- 26"x26"x12" Blaindell, 2 heads.
- 32"x32"x16" American, 2 heads.
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- Cleveland Horizontal 2½" bar.
- No. 1 Rockford, 2" bar.
- 30" Colburn, Vertical.
- 36" Bullard, Rapid Production Vertical Turret Lathe.
- 51" Bullard Vertical, 2 heads.

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- Whiton Auto. 36", Bevel & Spur.

- No. 3-26" B. & S. Automatic Spur.
- No. 6A Cincinnati 72" Automatic.
- 6" Gleason Generator.

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- Yankee Drill and Tool Grinder.
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- 16" Cincinnati, b. g., c. d.
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- No. 3½ Fox.
- No. 2 Kempnuth, Universal.
- No. 3 Cincinnati, cone drive.
- No. 3 B. & S. Plain, cone drive.
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- No. 52 Cleveland Automatic.
- No. 195 American Can Punch Press.
- No. 4 McDonald Punch Press.
- No. 3 Ferracute Punch Press.
- No. 2 Kane & Roach Multiple P. & S.
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- 8" Eaton Pipe Machine.
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15" Gleason Bevel Generator with segments.....	300.
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- No. 59 1/4 Toledo straight side single crank press, tie rod frame, 12" stroke. Motor drive.
- No. 76 1/2 Bliss straight side press, single crank 4" stroke. Belt drive. Geared.
- No. 165 Consolidated double crank press, 37" between housings. Flywheel type.

All the above are real bargains

Other Machines

- 3/8-1/2" Cleveland auto screw machines, both model A and B. Late serials.
- Two No. 00 Brown & Sharpe auto screw machines with slotters. Serials 5802, 5803.
- Two No. 0G Brown & Sharpe auto screw machines serials 4308, 4310.
- No. 2 Cincinnati universal miller, all power feeds, dividing head, vise, etc.
- Nos. 5 and 6 Becker vertical millers.
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- 15" Dill slotter, very fine shape.
- Mos. 3 and 4 Cincinnati High Power vertical millers.
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Many others; drills, grinders, lathes, hand screw machines, punch presses, shears, brass lathes, turret lathes etc. Send us your inquiries.

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108-114 N. Jefferson St.,

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Bargains ^{In New} and Used Tools

Used No. 2 Brown & Sharpe

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MILLING MACHINES

Used No. 1 Kempsmith univ., all equipment including vert. attach.
Used No. 2 B. & S. univ., cone. h.
Used No. 2 Kempsmith universal.
Used No. 2 Cinti univ., cone head.

Used No. 2B B. & S. plain, g. h.
Used No. 3 Brown & Sharpe, plain.
Used No. 3 Cincinnati pl., vert. att.
Used No. 28 Ohio plain.

LATHES

Used No. 3 Hardinge bench, $\frac{1}{2}$ " cap.
New 11"x5' Seneca Falls.
Used 14"x6' Bradford taper, q. c.
Used 14"x6' Monarch, q. c.
Used 14"x6' Hendey, q. c.
Used 15"x6' Sunstrand semi-q. c.
New 16"x7' Chard Mfg. type.
Used 16"x8' Advance q. c., chucks.
Used 18"x8' Lodge & Shipley, q. c.

New 18"x8' South Bend, pl. change.
Used 19"x10' Monarch, q. c.
Used 18"x10' American, q. c.
Used 20"x10' Greaves-Klusman.
New 20"x8' Boye & Emmes, q. c.
Used 24"x12' Boye & Emmes, q. c.
New 26"x14' Boye & Emmes, q. c.
New 26"x12' Boye & Emmes, q. c.
Used 24"x16' Boye & Emmes, pl. c.

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New Allen Drills, 1, 2, 3 & 4 spdls.
Used 1-spindle Allen Drill.
Used 2 and 3 spindle Allen.

Used 4-spindle Allen Drills.
Used 2-spindle Avey, ball bearing.

RADIAL DRILLS

Used 5' Drees.

Used Hammond type B sensitive.

UPRIGHT DRILLS

Used 20" Hoefler wheel and lever fd.
Used No. 2, 22" Colburn mfg. type.
New 23" Snyder, tapping att.
Used 24" Mechanics, sliding head.

Used 24" Barnes camel back.
Used 25" Barnes, stationary att.
Used 26" Barnes, sliding head.
New 30" Snyder, sliding head.

MULTIPLE DRILLS

New Baush No. 4 hd. 22x5:41 spdls.
Used 16" Kelly.

New Baush No. 4 hd. 30x46 22 spdls.

SHAPERS AND PLANERS

Used 16" Smith & Mills.
Used 20" G. & E. back geared.
Used 24" Cincinnati, b. g.
Used 24" Rockford power down feed.

Used 24" Gould & Eberhardt, b. g.
Used 26"x28"x8' Flather, 1 head.
New 36"x36"x12' W. & P., 2-heads.

GRINDERS

New Morse No. 3 plain, 8"x40".
Used No. 10 B. & S. plain, 6"x20".
Used Gisholt tool grinder.
New Churchill internal.

New No. 9 Cincinnati internal.
Used Bridgeport No. 110 knife grinder, belt or motor drive.

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Used No. 3A W. & S. universal.
Used No. 3 Superior.

New No. 4 Wood tilted turret

MISCELLANEOUS

New 4" Standard pipe machine.
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- H-36"x36"x12' Pond, 4 hds., r. m. d.
- H-36"x36"x14' Pond, 2 hds., r. m. d.
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- No. 2 Sellers Tool, belt.

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28"x28' Hamilton Motor Drive.
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Cincinnati 48"x36"x20".
Cincinnati 48"x48"x10".
Cincinnati 36"x36"x8".
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B. & S. Gear Cutter, 72", 60", 36".
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100 Bench Presses various makes and sizes

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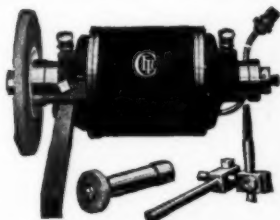
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The Cincinnati Electrical Tool Co.

2701 Madison Rd., Cincinnati, O.



Tool Post Grinder

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(Patented July 12, 1921—No. 1,384,154)

**Screw On and
STAY ON**



**Can't Split
Hold File Rigid**



The HYRO SHUR-GRIP File Handle screws on to the tang of a file in the same manner that a nut screws on a bolt—it can not come off unless unscrewed. It holds the file absolutely rigid, prevents file from slipping out and injuring hand—does not irritate or tire the hand. It cannot split or crack because the file tang bears entirely on the steel die (see small illustration showing cross-section view).

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200 Varick St., New York, N. Y.

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The New Britain Machine Co.
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